ABSTRACT OF A

Clinical Lecture

ON

CLEFT PALATE.

Delivered at Charing-cross Hospital,

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GENTLEMEN,—You have lately seen me perform the operation for closure of a cleft of the hard and soft palate in a girl aged four years, and have heard the details of the proceeding explained; you have handled the instruments used, and have had their application demonstrated, and I shall to-day point out to you various considerations in regard to the performance of this operation, which it is necessary to weigh before advising that it should be undertaken, and certain details that you must regard if you take the operation in your own hands. Amidst the more glowing achievements of surgery which of late years have been developed as a consequence of the adoption of antiseptic principles there are still some that fall within the scope of every hospital surgeon which are not to be learned from written descriptions, and the details of which are only to be acquired by a long apprenticeship and by watching the delicate skill and manipulative dexterity of some experienced hand. Such, for example, are lithotrity in the adult, or the union of a fissured palate in a child. The various details of the latter operation have been brought to their present stage of completeness by the labours of many workers, prominent amongst whom stand the names of Mr. Avery of this hospital, of Mr. George Pollock, and Mr. Thomas Smith. It is to the fortunate opportunity of watching and assisting the two last-named gentlemen that I know what I do of the manœuvres of the operation.

Now you will be perfectly justified in asking whether there are any cases which are unsuitable for operation, and whether with the great scientific advances of dentistry some or all may not be dealt with by means of artificial palates. To the first question I would answer that, when there are no other defects of development or of health such as would render any operation dangerous to life, there are no clefts of the palate so formidable as to render the possibility of closing them hopeless. But for these concomitant defects you must be very carefully on the watch. The most frequent and the most serious is some arrested development of the heart, and under such circumstances operation is almost certainly contraindicated. To the second query there are several objections. Dentists in this country will go so far as to tell you that any closure by operation is better than an obturator. There are several serious drawbacks to the application of such apparatus to the young. The initial proceedings are most difficult and troublesome, and do not repay the labour that they cost; and in the next place a plate once made for a child needs to be renewed at frequent intervals, because the constant pressure of vulcanite or any similar material causes the cleft to widen, and so the apparatus becomes loose and admits particles of food into the nasal cavities, where they set up irritation, and often ulceration. Besides this, the wires which secure the apparatus cause injury to the teeth round which they are fixed, and do irreparable harm. But a greater objection is that any such obturators tend to prevent the natural tendency of these parts to contract, and by pressure on the soft tissues indurate them to such an extent that no operative treatment can be undertaken later. I once was prevailed upon to operate on a young gentleman who had worn a plate from an early age, and the tissues, instead of being soft and vascular, were almost as hard and as free of vessels as a piece of cartilage. It was of great importance that, if possible, the cleft should be closed, and this I succeeded in effecting after three operations, and he passed into the Indian Army, in which he is now an officer.

There is of course every variety of cleft, from a mere slit in the uvula to one which reaches from the alveolus through the whole of the bony and soft palate, the septum being sometimes united to the maxillary bone, but sometimes being free and unconnected. As a rule, the slighter the cleft the earlier may operation be contemplated. I have in a very few cases, when the soft palate only was concerned, attempted to effect union at a very early age, as early as five weeks. But against this practice there are several very forcible objections. A child with the slightest deficiency even of the soft palate commences the battle of life at a considerable disadvantage. Swallowing is generally difficult, and the food frequently returns through the nostrils, and must therefore be given with very great care and in very small quantities. This is best accomplished by means of an old-fashioned flat bottle, with a rather large hole in the teat, by means of which small amounts can be thrown into the back of the fauces, from which they drop into the œsophagus and are easily swallowed. But under these circumstances children are generally feeble, thin, and weakly for the first few months of life, and are unequal to sustain any loss of blood or to repair any injured tissue. In course of time and with proper care they may become well nourished and healthy. By this period, however, dentition has commenced, with its accompanying gastric disturbances, and it is a cardinal rule never to attempt this operation whilst any teeth are in process of eruption, or whilst there is any sign of gastric disturbance, as indicated by the state of the tongue, the nature of the motions, or the presence of any breaking out upon the skin of the body. Thus you will find it wiser to decline to operate, even on the smallest cleft, before the age of two years and a half. When the fissure is more extensive other considerations must be taken into account. First, the general health of the child must be carefully considered, and if this be favourable you must look to the condition of the parts, and observe their vascularity and the amount of tissue available for your purpose. This need not always depend upon the width of the fissure, since it is often possible to bring down a piece of muco-periosteum from the septum, and make it available to bridge over the gap when united to the flap from the opposite side, and you will find that the more the vault of the palate approaches the Gothic form of arch, the closer in contact with the edges of the flaps fall which you release from the bones. But in unfavourable cases there are still other considerations which will make you postpone operation till later, even until the fifth or sixth year, when the temporary gives place to the permanent teeth. It is important that the child shall be docile and capable of understanding the instructions of the nurse, and to this end it is a good plan to let the skilled nurse have charge of the patient for some length of time before the operation is performed. On the other hand, remember that the older the child grows, the more confirmed is the habit of talking with that peculiar intonation which is characteristic of this defect, and which is so difficult to unlearn. Therefore my advice is that as soon as circumstances seem favourable after three years of age the operation should be performed, although my experience is that the later the operation is undertaken the better are the results so far as primary union is concerned, but the worse as regards the faulty habit of talking.

Opinions differ on the question of dividing the operation, and dealing with the soft and hard palates on separate occasions, but personally I have found no advantage in so doing. Occasionally, as when the patient bears the anæsthetic badly or where the proceedings are protracted owing to hæmorrhage or other causes, it may be advisable to be content with the closure of the soft palate, only leaving the hard for a second opportunity at six or twelve months' interval, and it will be found that the union of the soft parts only helps considerably towards the contraction of those in front of them.

I have tried various ways of placing the patient's head. The reversed position, with the head hanging over the end of the table, has the advantage that it affords a better view, and there is no fear of the blood entering the larynx, but from the venous congestion which ensues the amount of blood lost is greater, and consequently I prefer to have the head well raised upon an air pillow, when with rapid sponging the hæmorrhage need not be a source of inconvenience. After the muco-periosteum has been detached from the bones a great deal of freedom to the tissues will be gained by passing the blades of a pair of strong curved scissors

on either side of the fibrous attachment of the soft palate to the bone, and dividing freely. This proceeding allows the parts to fall, and in most cases to come together with very little interval, and is a most essential feature of the operation. The pared edges of the soft palate can then be brought in contact by means of horsehair stitches passed on rectangular needles, and the silver wire, which is passed by means of Smith's needle through the anterior portions of the cleft, can be twisted as far as is thought prudent, and can be further tightened up before the operation is concluded. The former methods of avoiding tension by dividing the muscles, the palato-glossus, palato-pharyngeus, and levator palati, are now simplified by using a free incision, which runs from near the alveolar margin in front, parallel to the edges of the flap, backwards to the middle of the soft palate. These being made on either side, allow the approximation of the raw edges when the wire stitches are finally twisted up. Notwithstanding that the bleeding is often free, it generally stops with a little firm pressure with a sponge; and although it has happened that the hæmorrhage has been so serious as to necessitate plugging of the posterior palatine artery in its canal, which is not difficult to find, I have fortunately never met with such an accident.

The after-treatment calls for the greatest patience and tact on the part of the nurse. The child must be prevented from crying as far as possible, and nothing but fluid food should be given for the first ten days, after which fish and chicken may be allowed, but must be finely divided and passed through a fine sieve. Unless there is reason for doing so, I never permit the mouth to be opened for inspection until the end of a week after operation, and the patient must not be permitted to talk for a still longer period. The stitches need not be touched until union is firm, and may be left for several weeks if the superfluous wire has been cut short to prevent it catching the food or irritating the tongue. If draughts are avoided the patient may be dressed, and allowed to move about in the course of a week, or even less.

The results obtained will naturally interest you, and from the books of this hospital and of the Hospital for Sick Children, and from my private note-books, I find that I have performed the operation on sixty different individuals, some of whose cases required a second, a third, or even a fourth additional sitting in order to effect complete closure. Two of these were adults, in both of whom the greater part of the fissure was united. One was a widow of twenty-seven, the other a young man of nineteen, the clefts being congenital in both cases. The remaining fifty-eight were children of different ages, the time for operation depending upon the considerations just mentioned in most cases, or, as in some, upon the age at which they were first sent to see me. Of the total number one child died of diphtheria, contracted during an epidemic which occurred soon after the operation was performed; but, including this, only seven failed entirely at the first sitting, and of them two were treated successfully at a subsequent operation. Twenty-eight cases were "partially successful"; that is to say, more or less union was obtained at the first operation, and of these nine were subsequently completely closed. Probably the latter number would have been much increased both under the first and second headings but for the unfortunate propensity of the lower classes to neglect to bring patients to be seen again after an interval, since it is a gratifying and decided fact that second operations in these cases are attended by a very large proportion of satisfactory results. In the remaining twenty-three cases complete union was obtained at the first operation. Thus out of fifty-eight cases there were thirty-four for whom the cleft was entirely closed, nineteen in which it was partially united, and only five failures, results which, considering the difficulties surrounding the operation and the delicate condition of most of such patients, are exceedingly satisfactory. Probably owing to better nutrition, cases in private practice are more often successful than in hospital.

Where the cleft is very wide, or where failure has attended a first operation, Sir W. Fergusson, following Dieffenbach, advocated a method by which the horizontal portion of the bony palate was punctured by a chisel, and levered towards the corresponding part on the opposite side, to which it was secured by wire sutures. I have seen this plan adopted with success in a case which had failed after the ordinary operation, but have never had occasion to follow it, and I should prefer in such cases to carry out the ingenious suggestion which has been recently advocated and successfully carried out by Mr. Davies-Colley, which consists of carrying a flap across from one side of the hard palate to the other.

If you are fortunate in obtaining complete closure of the cleft, there remains the trouble of getting rid of or modifying that peculiar intonation which is so great a drawback to subjects of this deformity. A very great deal can often be done in this direction, either by those who make a special study of the correction of these defects of speech, or by patient tuition on the part of any persevering and intelligent person. But even if little can be done in this direction, you will find those patients who are old enough to remember the inconveniences connected with their former state, because, as a young lady who had had her palate closed, and who brought her younger sister to me for the same operation, besides the improvement in the voice, there is such great relief from the inconvenience attendant upon swallowing and the lodgment of food in the cleft and in the nasal cavities.

ON THE RADICAL CURE OF HERNIA, WITH ESPECIAL REFERENCE TO CERTAIN METHODS OF OPERATING.

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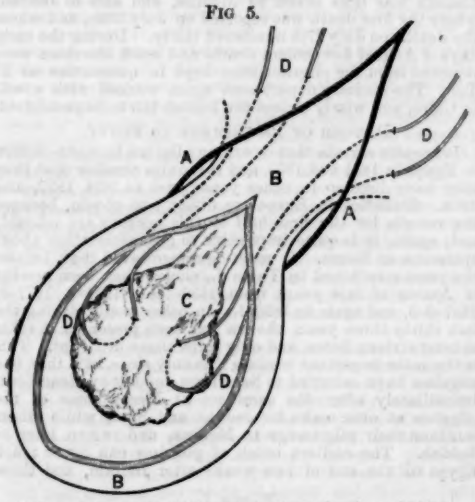
II.—CASES IN WHICH THE CONTENTS OF THE SAC CONSIST OF BOTH OMENTUM AND BOWEL.

As has already been stated, the prospects of a radical cure in the true sense—i.e., leaving the patient entirely independent, under ordinary circumstances, of the use of trusses—are considerably less in these cases than in those previously discussed, the main obstacles to complete success being the large size of the ring, the rigidity of the structures, which render the approximation of the walls of the canal difficult and sometimes impossible, and the entire absence of any inclination to spontaneous contraction of the parts, excepting in hernia of very recent origin, rarely seen in this class of case, which is almost always of long standing. It necessarily follows that the amount of relief ultimately obtainable will often depend solely upon the actual strength of the barrier across the internal ring, since the help afforded by the approximated walls of the canal is in most cases not of much *permanent* value. The degree of the rigidity of the parts is determined to a great extent by the chronicity of the hernia; it also appears to be in direct proportion to the amount of omentum which the sac contains, whilst it is comparatively independent of the quantity of bowel. It has long been an accepted principle in operations for the radical cure that all redundant or altered omentum should be ligatured and removed, the stumps being returned into the abdomen and left to their own resources. Personally, I have for some time felt that by this wholesale removal valuable material is sacrificed, some of which should be utilised for strengthening the barrier across the internal ring—certainly in all inguinal cases of this kind, and in some umbilical herniæ. Acting upon this view, I have been led to utilise the omentum in appropriate cases in the way described in the following operation, which is not intended to apply to instances in which merely a tag of recent omentum is found in the sac whilst operating upon younger subjects, in whom the ring is nearly always of moderate size, with supple margins.

Details of the operation for the radical cure by the use of an omental pad in inguinal hernia.—The parts having been exposed in the manner already described, the sac is opened and the bowel returned, any adhesions having been dealt with in the ordinary way. The omentum is now examined, and a flattened piece selected large enough to cover the internal ring and overlap its edges for some distance. Should there be no single piece of the desired size or shape, two smaller portions may be stitched together with carbolic catgut. In most cases, however, a suitable flap is obtainable by carefully disentangling the omental masses, especially when the structure has become large and nodular from spontaneous growth in the sac. In an ordinary way it is preferable that the flap should

be firm and even indurated, rather than too thin and recent. The portions of omentum not required having been ligatured and removed two sutures of carbolised catgut about twelve inches long are passed by means of a needle through the omental flap, one on each side, a short distance from its edges, care being taken that no vessel is transfixed by the thread. One or more fingers of the left hand are now introduced by the side of the omentum (which is not yet reduced) into the abdomen through the neck of the sac, and a pile needle on a handle (unthreaded) is passed, from without inwards, through the abdominal aponeuroses about half an inch from the outer margin of the external ring, rather below the level of its upper end. Guided by the finger the needle passes down the inside of the sac, until the point projects through the incision made in laying it open. The needle, having been threaded with one end of the outer of the two sutures which transfix the omental flap, is withdrawn, carrying with it the suture end, which is left projecting from the abdominal aponeuroses at the point where the needle entered. The needle (again unthreaded) is now made to pierce the aponeuroses and peritoneum about half an inch below the first puncture, traverses the interior of the sac in the same way, and is then threaded with the other end of the outer suture, which is carried through the aponeuroses by the withdrawal of the needle in the same way as before. This proceeding is repeated, step by step, on the inner side of the ring, with the suture transfixing the omental flap near its inner edge. The resulting arrangement of sutures &c. is seen in Fig. 6. The omental flap, together with any ligatured stumps, not previously reduced, is now carefully returned into the abdomen, the suture ends (D, Fig. 5) being at the same time drawn

FIG 5.

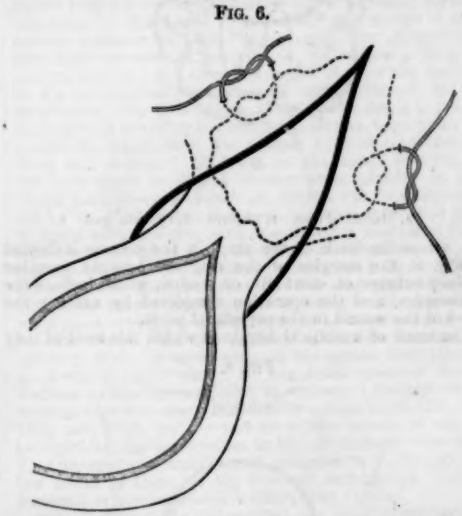


A, Pillars of ring. B, Sac laid open C, Omental pad. D, Sutures passing through abdominal aponeuroses and peritoneum above, and piercing edges of omental pad below.

upon so as to bring the flap over the internal ring and retain it in position (Fig. 6). The sac is then dealt with in any manner which seems suitable. If the invagination method is used, the final tightening of the sutures is left until after the sac has been invaginated in the way already described, care being taken that the invagination suture passes down through the sac in front of the omental pad, so that when reduced and turned inside out the sac lies in front of the omental pad, between it and the peritoneum of the anterior abdominal wall. The sac having been fixed, the sutures retaining the omental pad in position are drawn tight and fastened off. The operation is completed by the bringing together of the wound in the superficial parts after the walls of the canal have been approximated completely, or as nearly as practicable, by means of deep sutures of stout silk, the upper one or two of which may with advantage be made to transfix the sac in the way previously mentioned. By this operation a barrier is provided across the internal ring, which is composed of the inverted sac in front and the omental pad behind, arranged in such a way that the serous surface of the front wall of the sac is in contact with the peritoneum on the anterior abdominal wall, whilst the omental pad is firmly fixed across the serous surface of the posterior wall of the sac. The close and firm adhesion which rapidly takes place between these parts produces a barrier of no ordinary strength. In addition to this, the general matting together which occurs greatly helps in keeping together the walls of the canal; therefore acting not only as a barrier, but also as a uniting medium. In bringing together the walls of the canal it is important to use sutures of a permanent nature (stout silk is, on the whole, the best material), which should transfix the parts quite close to the edges of Poupart's ligament on the one hand, and pass well through the conjoined tendon on the other.

From what I have seen of this operation I believe it offers a better prospect of complete success in the class of case for which I recommend it than any other. It is hardly necessary to point out that it entirely differs from the practice which has been adopted by some of fixing the omentum between the walls of the canal, which is obviously objectionable from the wedge-like action which must necessarily be exerted by any plug left engaged in the canal. It has also been said that omentum fixed in the canal is prone to act as a guide for conducting the bowel to a weak point in the abdominal wall, but of this fact I am by no means sure. In the operation I now advocate the first of these objections clearly has no place, and, so far as the second is concerned, I venture to submit that, even if the bowel were conducted by the stalk of the omental pad to the situation of the original hernial

FIG. 6.



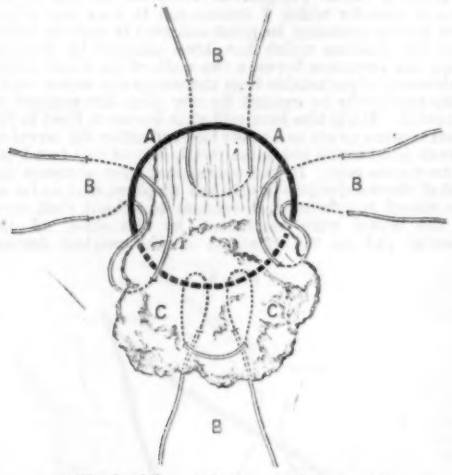
The dotted lines show omental pad reduced and retained in position.

orifice, the wall is there so strengthened that it would probably withstand pressure as well as the parts in the same locality would do in a patient with a weak ring who had never suffered from rupture. One other objection remains to be noticed—viz., the possibility of intestinal obstruction resulting from a knuckle of gut becoming strangulated by the stalk of the attached piece of omentum. I do not think that much weight should attach to this point, for, although Mr. Greig Smith mentions a case in which strangulation was produced in this way in a patient in whom the omentum had been fixed in the ring, it must be an occurrence of such rarity as to hardly afford any valid objection to a proceeding such as the method here advocated, in which the advantage derived from the attachment of the omentum over the internal ring altogether outweighs the risk of harm resulting from it. Moreover, the fact should not be overlooked that omental stumps, after having been ligatured and returned in orthodox fashion,

occasionally contract strange adhesions. For example, I have seen an instance in which a band, produced by the adhesion of a stump of omentum, was found stretching across a knuckle of the ileum, and although no obstruction had actually resulted, it was plain that most of the conditions necessary for its production were present. I am therefore inclined to think that practically the risk of obstruction is really not more when the omentum is attached than when left to itself.

In *umbilical hernia* the sac is exposed and freely laid open. Any adhesions which exist having been dealt with, the bowel is reduced. The sac is then dissected out and cut off short at the margin of the ring. A suitable pad of omentum is next selected, the remainder being removed or returned into the abdomen, and four sutures, passing through the aponeuroses and peritoneum, a short distance from the margin of the umbilical opening, are arranged as shown in Fig. 7. After reduction and fixation of the omental

FIG. 7.

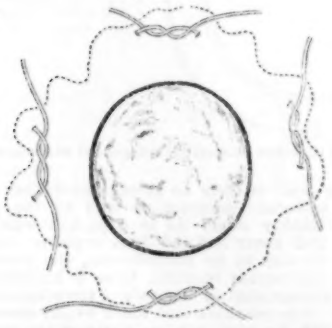


A, Margin of ring. B, Sutures. C, Omenta pad.

pad across the back of the ring, in the manner indicated in Fig. 8, the margins of the ring are brought together by deep sutures of stout silk or tendon, which include the peritoneum, and the operation completed by uniting the edges of the wound in the superficial parts.

The cases of umbilical hernia in which this method may

FIG. 8.



be considered undoubtedly useful are those in which the ring is large and its margins so resistant that approximation, if not actually impossible, can only be effected at the expense of great tension. In such cases the adhesion of the omental flap across the back of the umbilical orifice not only helps to prevent the margins of the ring from dragging apart, but also obliterates the depression along the posterior aspect of the apposed edges, which is otherwise prone to form a fossa for the odgment of gut which by gradual distension of the parts leads to a reproduction of the hernia, in the same way that the ventral herniæ seen too commonly after abdominal section are developed.

It cannot be too often repeated that the radical cure of hernia is hardly likely to be effected with equal success in all cases by the same operation. I have therefore ventured to call attention to the methods now described, not because I think them universally appropriate, but because, when practicable, they are in some respects better adapted for attaining the object in view than any other plan with which I am familiar. At the same time I wish it to be distinctly understood that I have no desire to imply that they should in all cases supersede other well-devised plans, notably those of Macewen, Greig Smith, and Stanmore Bishop.

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CHOLERA IN EGYPT.

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(*Concluded from page 604.*)

Cholera at Mecca in 1891.—The pilgrims assembled at Mecca in July, and the first case of cholera was reported from there on the 11th of that month. Upon July 17th, the day after the sacrifice of sheep, there were twenty-three cholera deaths among the faithful assembled at Mina, the deaths numbering 140 on the following day. During the next three days, by which time the pilgrims had returned to Mecca, there was a daily average of 400 deaths in that city, the numbers then declining gradually to seventy-nine on July 27th, because of the rapid dispersion of the pilgrims. Cholera was thus taken to Medina, and also to Jeddah, where the first death was reported on July 20th, and where the deaths on July 27th numbered thirty. During the early days of August five cholera deaths and much diarrhœa were reported from the pilgrims then kept in quarantine at El Tor. The sanitary department again worked with a will in Cairo, and wisely caused the Tantah fair to be prohibited.

DANGER OF PILGRIMAGE TO EGYPT.

It is quite certain that returning pilgrims brought cholera to Egypt in 1831 and 1865, and it is quite possible that they may have done so in other years, such as 1834, 1837, and 1848. Statistics in Egypt are difficult to obtain, because the records for the first half of this century are mislaid, and, again, it is quite impossible to get information about epidemics at Mecca. It must be remembered that, besides the years mentioned in Table I., cholera has been present in Arabia of late years, from 1859–1865,[1] 1871–2, 1877–8, 1881–2–3, and again in 1890–1. In other words, during the last thirty-three years cholera has been present in Arabia at least sixteen times, and only three times in Egypt. This is the more important because it is only since 1858 that the pilgrims have returned to Suez from Jeddah by steamboat. Immediately after the sacrifices at Mecca some of the pilgrims at once make for Jeddah and Suez, while others continue their pilgrimage to Medina, and return later to Jeddah. The earliest batch of pilgrims can never reach Egypt till the end of two weeks after Bairam, and those

TABLE I.

Cholera Years.	Cholera at Mecca.	Earliest return of Pilgrims to Suez.	Duration of Cholera in Egypt.
	1831—Spring	July	July to October (end)
	1834—?	? June ..	?
	1837 {Summer and Autumn 1835}	? May	September
	1840—?	? April ..	?
	1848—1846-7-8 ..	February ..	June 24th to Oct. 20th
	1849—1848	? January ..	?
	1850—?	? January ..	June (end) to Oct. 1st
	1855—1854-5	Oct. 19th ..	May 26th to Sept. 22nd
	1865—April or May..	May 19th ..	June 2nd to Sept. (end)
	1866—May	May 7th ..	March to Nov. 12th
	1883—1881-2	Dec. 4th, 1882	June 22nd to Dec. 26th

[1] Le Choléra, par Dr. Fauvel, Paris, 1868, p. 135. Cholera in East Africa, Dr. Christie, London, 1876.

who have afterwards travelled the extra 245 miles to Medina cannot be certain of reaching Suez till some month or so later. Thus in 1891 pilgrims undelayed by quarantine would have been liable to reach Egypt any day during August and the beginning of September, and now every year, until at least 1897, we shall be exposed to the arrival of about 10,000 returning pilgrims during the hot summer months. Now a careful study of the various epidemics in Egypt will show that the time to expect an explosion is June, while the potential cholera season for the whole country lasts from the end of May to the beginning or end of October. I therefore think it necessary to call attention to the fact that for the next few years the return of the Hajis will coincide with the season of greatest cholera danger to Egypt. If the Egyptian Government considers it impolitic to prevent the pilgrimage when cholera is present in the Hedjaz, means should be taken much more stringently than usual to prevent paupers from accompanying the caravan to the Holy Places. But it is not only the persons and the baggage of the pilgrims who may in some unknown way communicate disease. Those who can afford it bring back for their friends and for home consumption bottles of the precious Zem-Zem water, said to date from the story of their ancestors, Hagar and Ishmael. This water acts as a purge and tastes and smells horribly, and when analysed in London some years ago was found to be dangerously contaminated by sewage. If it is possible to convey cholera poison in a bottle, this holy water will probably do it.[2]

DANGER OF CROWDED FAIRS TO EGYPT.

In 1848 the cholera poison, if not first discovered there, seems at least to have been diffused over the country immediately after one of the Tantah fairs. Again, in 1883, cholera appeared at Damietta just after the large fair there. Until we know something more about the mysterious causes of cholera, it seems not unscientific to pay attention to the various predisposing causes of an epidemic, and among these must certainly be reckoned any great concourse of Oriental people. It is a little unfortunate that the great Tantah fair takes place always in August, and, being a very popular one, it is attended for a week by numbers usually exceeding 200,000. The sanitary department for the last few years has done something towards making these festival camps less insanitary, and in 1884 and 1890–91 the great Tantah fair was prohibited.

Nomenclature.—Epidemic cholera is called by a variety of names in Egypt, the most common of which are *el hola* (the terrible), *el heada*, and *el shota*, all used exclusively for a malignant epidemic. Natives are also beginning to use the Greek word cholera, and sometimes make use of *el howa el asfar* (the yellow air), the origin of which is not certain. The term *el hadith* is also occasionally used, but that may be employed for any extraordinary mortality among men or beasts.

Land Quarantine.—The Vienna Conference of 1874, with only one dissentient vote, decided on the inefficacy and uselessness of sanitary cordons, but this seems to have been forgotten in Egypt, where they were freely used in 1883. In every case they were put on by the police after people had escaped from the infected town, and invariably did great harm. They were continued in some places till the beginning of August, in spite of the fact that cholera had then overrun the whole of Lower and Middle Egypt. At the outset of the epidemic, urgently needed medicines and disinfectants from Cairo were kept[3] outside Damietta for three days by the cordon, and this was by no means an exceptional case. In June, 1884, when we were making preparations for a possible return of the foe, I persuaded the sanitary committee, which was then the chief hygiene body of the country, to decide that, in the event of future epidemics, no attempt should be made at quarantine by land; and it is to be hoped that no future panic will cause this decision to be forgotten. But it must be remembered that in 1884 Spain and Italy, yielding to terrified advisers, imposed quarantine of five and seven days, both on the frontier and also in their own interiors. The Sanitary Conference at Rome in May, 1885, again voted that land quarantine and cordons were useless, Turkey alone disagreeing. Since then, true to her principles, she has surrounded Syrian villages with police cordons, both in 1890 and 1891.

[2] Zem-Zem water is used by the devout to break their fast during the month of Ramadan, which precedes the Holy Week by three months.

[3] Blue Book (Commercial), No. 38, 1883, p. 28.

Quarantine Board.—This administration has the serious disadvantage of being international, and an analysis of its odd composition will show how difficult it must be for its members receiving various orders from their own Governments to agree on any semi-political question. Besides the English President, there are twenty-two members, fourteen only of whom are medical men. Egypt is allowed seven members, including four English, a Swiss, a German, and an Algerian. France provides a Vice-President and another member, but Turkey is represented by a Greek, Spain by a Smyrniote, Portugal by an Italian, Sweden and Denmark by Greeks, Belgium by a Syrian, and Holland by a Maltese. England, relying upon domestic sanitary progress and the great sums of money expended on public health, can afford to substitute other measures for quarantine by sea; but it is difficult to see how Egypt will be able to imitate her for the present. The guardian of a powder magazine must take exceptional care to prevent any possibility of the entrance of a spark of fire; and Egypt, with her befouled drinking water and sewage-contaminated air, cannot afford to run any risk of possible exotic invasion. Her own people are apathetic and ignorant enough, but she is exposed to the risk of neighbours even less sanitary than herself, and to the incursion every year of some 10,000 pilgrims, accompanied by an amount of filth which must be seen to be believed. So long as she retains the quarantine system she is bound, however, to keep all her stations of detention in the highest degree of preparedness and sanitation.

ATMOSPHERIC INFLUENCES.

The season of cholera prevalence in Egypt from the end of May to October corresponds exactly with the four hot summer months, as is usually the case outside India. A high temperature favours the spread of cholera, but there is no evidence that the epidemic years 1865 and 1883 were hotter than the average. Neither could anything seriously abnormal be discovered by searching the records of atmospheric pressure in 1883. Egypt, with the exception of autumnal showers at Alexandria, is rainless during the cholera months; but after the middle of July the moisture in the air gradually increases, in consequence of the Nile inundation. The pure dry air of the desert seems to prevent cholera from invading the Soudan, and has apparently prevented the transport of the disease by land caravans from Syria and Arabia.[4] El Arich, on the desert frontier, was the only place in Egypt exempt from cholera in 1883. Ozone has perhaps no effect on cholera, but it was pointed out by Dr. Kirker that the mean relative amount of ozone at Alexandria in June, 1883, was only 6·4, compared to 7·6, which was the average of the previous eight Junes.[5] Also the mean wind force for June, 1883, was less than for any previous June for thirteen years, and the nine days from June 12th–20th were phenomenal in showing a continued low wind force, which had never occurred in summer and only twice in winter since the meteorological records were first taken in 1876. It seems rational to suppose that stagnant air would be highly useful for the development of cholera. Various writers[6] have referred to oppressive atmosphere and unusual clouds in Egypt during the epidemics of 1831, 1848, 1865, and 1883, and to various colour effects of sun and twilight, all due to moisture in the air without wind force. This unventilated condition of things is very common for a few hours in Cairo in the summer, and though very unpleasant, is not associated with evident disease.

Subsoil Water.—In Calcutta it has been shown that the maximum of cholera prevalence is from February to May. This corresponds with the fall of the subsoil water, which goes on sinking steadily till its gradual rise in May. This bears out one of Pettenkofer's laws that the maximum cholera corresponds with the lowest and the minimum with the highest level of subsoil water.[7] In 1890 the sanitary department made some daily experiments with four wells in Cairo, and though the number of wells and number of years is not great enough to be certain of accurate results, it can be roughly seen from Table II. that the subsoil water near the Nile banks is at its lowest a month later than the lowest Nile. In other words, the minimum ground water within some 500 or 600 yards of the Nile is always about the middle of July at Cairo, and this is exactly the time

[4] In 1890 the land caravan returning from Mecca to Damascus by short stages lost all cholera en route, and arrived in perfect health.

[5] Blue Book (Commercial), No. 38, 1883, p. 67.

[6] Clot Bey, M. Chaidufeau, Dr. Willemin, Brigade Surgeon McDowell, and others.

[7] Parkes' Hygiene, London, 1887, p. 9.

when cholera has usually broken out in that city (June 17th to July 15th). The subsoil water then rises gradually till it reaches its maximum in November, by which time cholera has usually disappeared from Egypt.

TABLE II.

1890.	Distance from Nile bank in metres.	Lowest level.	No. of days after Nile.	Highest level.	No. of days after Nile.
Nile at Rodah	..	June 15	..	Sept. 28	..
Well in Ezbekieh quarter	*500	July 8	23	Oct. 31	33
Well at Sanitary Offices	650	July 23	38	Dec. 5	68
Well in Saida Zenab quarter	1000	July 28	43	Dec. 10	73
Well in Khalifa quarter	2050	Aug. 7	53	Jan. 14	108

* Distance from Ismailieh Canal.

Influence of the Nile.—There is a popular belief in Egypt that cholera never breaks out after the Nile has risen. If this means that it does not appear in any given town after the rise there, it is manifestly without foundation; but if it means that cholera does not explode after the Nile flood has reached the Delta, it is true. If we remember that every town in Egypt is supplied with drinking water either from the Nile direct or from its canal branches, it is quite obvious that the rapid flow in great volume of the annual rise must very greatly affect the health of the inhabitants. It is probably the flood of August and the following months which drives cholera out of the country. An average Nile is at its lowest at Cairo about June 17th, and its rise is then so gradual as to be unimportant till the middle of July. In 1883 the river was very low until the rise began at Cairo on July 1st, and this rise would not reach Damietta in any perceptible form till at least July 10th. It would take another month before it could purify the water-supply, and it was then that cholera ceased to ravage the town. Synchronous with the Nile flood is a healthful north wind which blows up the river, and must be of use in dispelling disease. Table III. shows that the Nile reached a very low level before its rise in five cholera years, and this, with its consequent effects on subsoil drainage, must certainly have had a very ill-predisposing effect. Also, it should be noticed, that in 1855, as in 1883, the rise was late in coming, and the Delta would, therefore, have an extra fortnight of very bad drinking water. In 1865, on the other hand, the Nile was neither abnormally low nor late. The arrival of the Nile flood is, of course, not sufficient to prevent the outbreak of cholera, but it may be noticed that Upper Egypt, which gets its rise two weeks or more before Cairo, is affected by cholera some days after Cairo; but the presence of cleaner water in bulk may very likely modify the severity of the disease in the towns above Cairo.

TABLE III.

Remarks on the Nile gauge at Cairo.

Cholera years.	Date of rise.	Lowest level before rise.		Remarks.
		Cubits.	Digits.	
1831	Not known.			
1834				
1837	—	5	8	Extremely low.
1840	—	7	16	Good.
1848	June 13	5	14	Extremely low.
1849	June 21	5	11	Extremely low.
1850	June 18	5	11	Extremely low.
1855	July 1	7	·12	Good.
1865	June 7	7	11	Good.
1866	June 27	7	21	Good.
1883	July 1	6	22	Rather low.

Cattle Plague.—Bovine typhus immediately preceded the cholera of 1883, and may have had something to do with the poisoning of the water-supply owing to the careless habits of the peasantry in thus disposing of carcases, and also may have been one of the causes of the diarrhœa and vomiting which in some places anticipated the epidemic. The fellah, looking on meat food as a rare treat, was only too glad to eat the diseased cattle which had been slaughtered by veterinary order. I have thought it would be interesting to see whether cattle plague had any connexion with previous cholera epidemics, but of this there is no proof. The cattle plague was introduced from Southern Russia into Egypt in 1841, and, raging till 1843, is calculated to have destroyed 665,000 head during the three years. In 1863 there was another visitation, and it was reckoned that 734,642 cattle died, and were mostly thrown into the Nile,[8] but none of these were cholera years in Egypt. From what we know of native methods of stamping out disease, we may assume that it was still present in the country in 1865, but no writers on cholera have referred to it.[9] In 1881 the plague was again introduced into Egypt by Russian cattle, and lasted till the serious epidemic of it in 1883. In April, 1884, it was reported from Upper and Lower Egypt, and I found it myself in Cairo. We persuaded the Government to pass some urgent regulations, and prevented the import of all cattle from infected countries, such as Russia and Syria. Since then the disease has been unknown in Egypt.

[*Errata.*—The following misprints in the previous part of this article require correction:—P. 602, line 27 from bottom of second column, for "existence" read *mention;* p. 602, line 12 from bottom of second column, for "1844" read *1884;* p. 602, line 11 from bottom of second column, omit "had"; p. 603, line 11 from top of second column, for "to" read *and;* p. 603, line 19 from top of second column, for "disinfectant" read *disinfectants;* p. 603, line 40 from top of second column, for "Ramadam" read *Ramadan;* p. 604, line 13 from top of first column, for "impossibly" read *absolutely.*]

THE PERMANENT CURE OF STRICTURE BY EXTERNAL URETHROTOMY.

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IN August, 1889, a patient forty-five years of age was admitted under my care at the London Hospital suffering from an attack of synovitis of the knee-joint. In the course of inquiry he informed me that eighteen years before he had been operated upon for stricture by a Dr. South, of the City-road, who had died many years ago. Previously to this he had suffered a great deal of trouble with his urethra; on several occasions he had been unable to pass his urine, and he had frequently been obliged to apply to hospital for relief. Since the operation he had not experienced the least inconvenience, and he had never passed an instrument for himself or taken any other precaution. With regard to the nature of the operation, he was quite clear that he had been cut from the outside. Having obtained permission to examine him, I found a linear scar in the middle line of the perineum, about an inch and a half in length, just such a one as would have been left by external urethrotomy. There was no induration about it, and the tissues were perfectly flexible. On trying a catheter, I found that a No. 12 English entered the bladder without difficulty, and without even giving the sensation of passing over a rough surface. In other words, external urethrotomy had been performed eighteen years before on a very bad case of stricture, and the patient had been cured. I use the term "cured" advisedly. I am aware that the curability of stricture has been denied; I was taught so myself, and I have taught others so; but I have seen very good reason to alter my opinion.

In another case under my care, although the length of time was not nearly so great, the result was scarcely less instructive. The patient, who was fifty years of age, and weighed eighteen stones, had for many years suffered from a stricture, which had at last culminated in an

[8] Fleming: Animal Plagues, London, 1882, p. 499.
[9] Colucci Bey: Typhoid fever was very prevalent in 1863.

abscess and a perineal fistula. Dilatation had been practised twice with benefit, so far as the size of the stream was concerned. Holt's dilator had been used on another occasion, and the patient was in the habit of passing a catheter for himself. In spite of everything, however, there was a continuous gleet, and the fistula refused to close. At the time of admission a No. 11 English catheter passed fairly easily; but the urethra, although the stream of urine was of good size, was practically strictured. The walls were hard and rigid; the catheter rubbed and grated against them as it passed down; and when the urethrameter was used it was evident at once that, instead of all the tissues around being soft and yielding, as they should have been, they were as hard and resistant as cartilage. The external orifice of the fistula was in the middle line of the perineum, lying in the centre of an indurated mass that filled up the space between the anus and the scrotum; and though the amount of urine that came through it was not very great, it showed no sign of diminishing. External urethrotomy was performed in August, 1888. The urethra lay at a depth of nearly three inches from the surface, the whole of the space between being filled with a dense mass of cicatricial tissue, in which no trace of any of the normal structures could be distinguished; the cut section looked like that of scirrhus more than anything else. For some days the whole of the urine came through the perineum, and the wound suppurated freely, but there was no rigor or constitutional disturbance. At the end of a week a No. 12 English catheter was passed. In a fortnight the incision was almost healed, and in place of the hard mass that projected above the level of the tissues around, there was a soft pliable cicatrix, so thin that a catheter in the urethra could be distinctly felt from the outside. Eighteen months after the operation there was no evidence of recontraction, and the fistula remained sound. The patient had passed a catheter once or twice in the interval, as he expressed it, to make sure that everything was free.

The length of time in such a case as this is of course much too short for any definite conclusion, and the patient to some extent lessened the importance of the case by passing a catheter for himself (so far as I could ascertain he only did it on four occasions), but the fact remained that recontraction had not commenced, and what is in my opinion of still greater importance the tissues retained their pliability; the dense cicatricial mass that surrounded the urethra and prevented the walls from regaining their natural character had completely disappeared. In addition to these, I have the notes of three other cases (varying in duration from one year and three months to two years) in which the history and the result are essentially the same.

This experience of mine is by no means unique. The first case mentioned by Syme is equally striking. Dilatation had been practised on several occasions; internal urethrotomy had been performed twice, and various other measures had been tried without obtaining more than a very transient degree of relief. External urethrotomy was performed, and thirteen years after there was no sign of recontraction, although in the meanwhile none of the usual steps had been taken to prevent it; and similar histories, only of shorter duration, are recorded of many others under his care. One in particular is of great importance, as two years later a post-mortem examination was made, and it was demonstrated that not only was the urethra not diminished in diameter at the site of the old stricture, but it was actually widened; there was a funnel-shaped dilatation on the floor, as if the cicatrix had yielded under the pressure of the urine.

Harrison records a closely similar occurrence. In 1867 Bickersteth performed Syme's operation for traumatic stricture and urinary fistula of the worst type; in 1869 the man was known to be quite well, although nothing had been done to prevent recontraction. After his death in 1885 the urethra was removed and examined, and no sign of the stricture could be found; in fact, the urethra, as in Syme's case, quoted above, is described as being dilated in proportion to the rest. Other observations of like character have been recorded from time to time, but I do not think any more is needed to establish the fact that some of the very worst strictures, involving the deep part of the urethra, traumatic as well as gonorrhœal, with fistulæ or without, are in certain circumstances curable,—that is to say, after the lapse of many years they do not show the least tendency to recontract.

The pathological anatomy of these strictures furnishes, I believe, a reasonable explanation both of the success that attends external urethrotomy and the failure, more or less complete, of all other methods. Strictures that implicate the posterior part of the corpus spongiosum and the bulb (and these are practically the only ones with which external urethrotomy is concerned) present two different stages. In the one the irritant is superficial, and the mucous and submucous layers are the only structures involved. The soft spiral folds into which the lining of the urethra is thrown when it collapses are welded together: the wall is rigid and unyielding, and the canal constricted, but the structures around are scarcely affected; the stricture is *urethral* only. In the other it is *peri-urethral* as well; the specific gonococcus, acting upon the mucous membrane, is no longer the only irritant; there is in addition an obstruction to the passage of urine, and with every act of micturition all the soft tissues that surround the canal are strained and stretched. As a result a large and constantly increasing amount of lymph is poured out, not in the submucous tissue only, but around the urethra, and especially below it: the interstices in the corpus spongiosum and the bulb are filled first; then, as the induration spreads, the tissues farther and farther away; until at length the urethra is invested by a mass of organised lymph as dense and hard as cartilage. Dissection shows the difference at once. In a urethral stricture the layers of fascia covering in the corpus spongiosum and the accelerator urinæ are distinct and well defined; the erectile tissue is unaffected, and there is no induration until the submucous layer is reached. In a peri-urethral one, on the other hand, the skin and superficial fascia are possibly unaffected (even they are often bound together by adhesions), but this is certainly not true of anything else. The deep fascia is thickened and fused inseparably with the tissues beneath; an incision in it does not gape or yield; the muscular fibres are thin and wasted; in many parts they are only to be recognised with difficulty, and the erectile tissue is so condensed and hardened that it scarcely bleeds when it is cut. In other words, owing to the constant irritation maintained by the urethral stricture, the corpus spongiosum and the structures around it are kept in a state of chronic inflammation; more and more lymph is poured out; all the interstices are filled with the inflammatory exudation, and the normal tissues are compressed and starved.

How long it is before the peri-urethral tissues become affected depends upon a variety of circumstances. Traumatic strictures in which suppuration has occurred, and gonorrhœal ones in which the infection is repeated again and again, may do so within a few months. On the other hand, years may pass before it happens. So far as treatment is concerned, it is more to the point that in most instances the distinction can be recognised at once. The density of the tissues in the middle line of the perineum varies in different people and at different ages, but if the corpus spongiosum or the bulb stands out distinctly, or if the consistence is uneven, one part feeling harder and more tender than the rest, nothing more is required. No measure that aims at less than the absorption of the whole of this inflammatory exudation has a chance of permanent success. The only hope of effecting a cure is to remove the original irritant (without substituting another in its place) and to give all the tissues around the urethra perfect physiological rest until they have recovered their normal state of nutrition and freed themselves from the lymph that infiltrates them. This can be done by external urethrotomy, and it cannot be done by anything else.

Mechanical dilatation cannot succeed in a peri-urethral stricture. Pressure undoubtedly causes the absorption of recent lymph, but it cannot influence such widely diffused exudation without a degree of force that would do more harm than good. Continuous dilatation is equally ineffectual. How it acts is not quite certain; apparently the irritation it sets up leads to hyperæmia and rapid softening of the dense tissue lying near; but this (and experience fully confirms it) can only end, as soon as the irritant is removed, in fresh condensation and recontraction on a scale even worse than before.

Electrolysis is no better. A cicatrix, it is true, melts away before an electric current if it is in contact with the electrode; but this is not the condition in certainly a very large proportion of these cases. There is no real analogy between a stricture at the meatus, due to ulceration and destruction of the mucous surface, and one deep down in the urethra resulting from the action of a chronic and

persistent irritant of much less intensity. In very many of these cases the mucous membrane is quite intact; atrophied, it may be by pressure, but not destroyed. There has never been any ulceration; traumatic cases excepted, there is no superficial cicatrix, and the lining membrane is still capable of being dissected off and laid out its full width. The exudation that causes the stricture lies in the submucous tissue and the layers outside this; much of it is a long distance off; and it has never yet been shown that an electric current is capable of causing the absorption of tissues that are not in contact with the electrode.

Internal urethrotomy stands on somewhat different ground. If the incision is sufficiently thorough (and it must traverse the whole length and depth of the stricture tissue) it relieves the urethra at once of the primary cause, but this is all it can do. There is no physiological rest for the inflamed tissues around; they are still kept in a state of constant irritation, not it is true by the tension of the stricture, but by the accumulation and retention of the secretion of the wound. Nutrition is still impaired, the chronic inflammation still persists; and even if complications such as hæmorrhage, urinary infiltration, and suppuration do not occur, more lymph is poured out, and later recontraction follows. At the best all that internal urethrotomy can do in a peri-urethral stricture is to insert a new longitudinal cicatrix in the middle of the old dense stricture tissue, without removing this.

External urethrotomy, on the other hand, is free from these drawbacks. The stricture, the original source of all the mischief, is divided thoroughly; hæmorrhage, if it occurs, does no harm, as the blood is not retained and has no opportunity of decomposing in the wound; urinary infiltration is impossible, the exit is too wide; the drainage is perfect, and all the tissues around, freed from straining and every other kind of irritant, begin to recover at once. The deeper part of the inflammatory exudation undergoes fatty degeneration and becomes absorbed; the superficial, that which immediately borders the wound, owing to its feeble nutrition breaks down into pus and melts away; granulations spring up on either side, the tissues regain their natural texture, and by the time the wound is ready to close the whole of the dense mass is absorbed, and in its place there is merely a thin pliable scar in the middle line.

There are two drawbacks to this operation—both serious, especially in the case of private patients who do not wish to be confined for any length of time to their beds, or even to their rooms, by anything connected with a stricture. The one is that there is an external wound; many patients not unnaturally have a strong objection to being cut, as they express it; the other that whatever the prospect of permanent cure, immediate convalescence is undoubtedly more protracted, and there is the inconvenience in the meantime of the greater part of the urine passing by an unusual route. For the rest, no other argument against it is of any weight. The immunity that it enjoys from all ordinary surgical complications is quite as great as, if not much greater than, that of internal urethrotomy. Manifestly if it is reserved for cases in the last stage of all, in which other operations are impracticable, some allowance must be made for this. Rigors and urethral fever are less likely to occur. There is no need to tie a catheter in—a practice I have long since abandoned as most injurious, and without a single advantage in compensation. It is sufficient to pass one at the end of a week, and then every third or fourth day until the wound is sound (with cocaine injected down the urethra and into the wound the proceeding is quite painless), and the scar lying exactly in the middle line, and forming as it were a prolongation forwards of the median septum of the bulb, does not in any way interfere with the function of the corpus spongiosum.

There is one small point of interest in connexion with this which only further examination can settle. Both in Syme's and Harrison's cases—the only two in which I have been able to find an accurate record of a necropsy—the urethra is described as being funnel-shaped at the seat of the old stricture, giving the impression that the floor had yielded. The coincidence is so remarkable that it seems to me not unlikely that the alteration in shape is due rather to the radial contraction of the scar left by the external wound drawing the floor down towards the skin, and thus affording an additional safeguard against recontraction.

The neglect of external urethrotomy appears to have arisen in great measure from the idea that strictures in the deeper part of the urethra are the result of ulceration, like most of those at the meatus. In reality, although this may occur, it is the exception; and the comparison between a cicatrix such as that left by the healing of an ulcer and the lymph that forms a peri-urethral stricture is very misleading. The one is due to suppuration, and if divided remains a cicatrix still without having lost (except for the moment) one particle of its power of contraction. The other is the outcome of long-continued chronic inflammation. So far as its pathology is concerned, a peri-urethral stricture is formed of lymph identical with that which makes its appearance in any other part of the body when it is subjected to the action of some slight persisting irritant. If the cause is removed, and no other is allowed to come in its place, the exudation slowly disappears and the tissues by slow degrees recover their normal condition of nutrition. So long as a stricture is confined to the mucous and submucous layers, it is possible that the indications may be fairly met by intra-urethral measures; in the case of a peri-urethral stricture, one that can be felt from the outside, the anatomy of the part and the function of the urethra render this impossible without an external incision.

NOTE.—Since the above was written I have met with another case in which twenty-six years had elapsed since the operation. For many years the patient had not taken any precaution, but there was not the slightest sign of recontraction.

Wimpole-street, W.

CASES OF TUMOUR OF NERVE TRUNKS,

ILLUSTRATING THE RESULTS OF EXCISION OF THE TUMOUR ALONG WITH THE AFFECTED PORTION OF NERVE.

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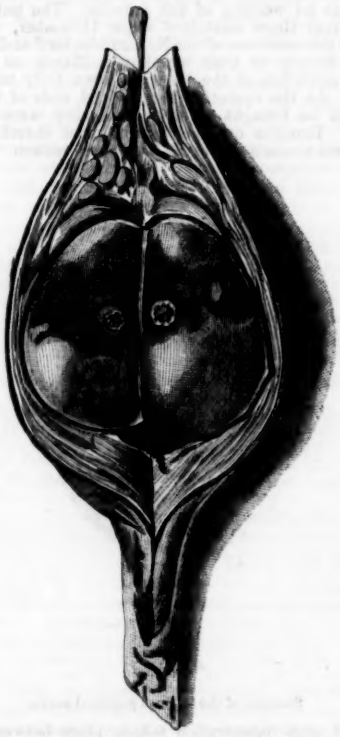
THE three cases which are the subject of this communication are identical only in the pathological character of the growth. In all it was sarcoma; and the tumour was so incorporated with the nerve fibres that it was impossible to dissect out the one from the other. The portion of nerve affected was therefore excised along with the growth, and in each case it comprised the whole thickness of the nerve. In two of the cases the great sciatic nerve was the seat of tumour, in the third the internal popliteal. In the first case no attempt was possible to suture the nerve, and an illustration was afforded of the condition of a limb as regards maintenance of nutrition and usefulness, after resection of a portion of its chief nerve trunk. In the second case of sciatic tumour a successful partial suturing of the trunk was effected, notwithstanding the wide separation of the ends. The case of tumour of the internal popliteal, which has already been noticed in THE LANCET, is again brought forward as an instance of that most interesting and still unexplained phenomenon of gradual regeneration and restoration of function in a nerve whose continuity has been interrupted by the excision of a not inconsiderable portion.

CASE 1.—Francis B——, aged twenty-four, was admitted into the Newcastle-on-Tyne Infirmary on Jan. 24th, 1888, on account of a tumour at the back of the left thigh. The lump had been noticed for five months. It extended from the fold of the buttock to the upper part of the ham, being ovoid in shape and movable from side to side, but not from above downwards. There was a good deal of pain below the knee and in the foot, so aggravated at night as to prevent sleep. The calf of the affected leg measured seven-eighths of an inch less than the right. There was no impairment of motion or loss of sensibility. A few days after admission the tumour was removed. The lower border of the gluteus maximus required division in order to get beyond the disease superiorly, and the lower section of the nerve was made at the upper limit of the ham. The tumour was easily shelled out. The wound healed rapidly, and in a month the patient was able to walk about without any support. The growth was found to be

surrounded by, and incorporated with, the strands of the nerve. (Fig. 1.) It would have been impossible to enucleate the tumour. Besides the main portion of the tumour, the greatly thickened nerve trunk above and below seemed to be infiltrated with the same material, so that the removal of about six inches of the nerve was necessitated. The cut surface of the growth was of a peculiar yellow, fatty appearance. In its substance were several hæmorrhagic spots, and others which looked like necrotic or caseating patches. In minute structure the growth was found to consist of fibrous material intermixed largely with small round cells and granules. The condition of the limb subsequent to operation remained surprisingly good so long as the patient continued under observation. After his discharge

FIG. 1.



Sarcoma of great sciatic nerve.

he returned from time to time to show himself, the last occasion being about six months from the date of the operation. He had then gone back to his ordinary work in the Jarrow Rolling Mills, and, as he thought, from having constantly to tread upon hot iron plates his foot had become sore. There were two small trophic ulcers on the outer border of the foot, and he was kept in hospital for a few days till these were healed. The foot had the smooth, blue aspect of skin characteristic of nerve lesions, but as yet no change had taken place in the form of the nails. It was sensibly colder than the other, and the limb was a good deal wasted; but notwithstanding this, and the complete paralysis of all the muscles below the knee, his gait was astonishingly firm. The ability to walk depended entirely on the extensors of the knee, which are innervated by the anterior crural, the limb below the knee merely playing the part of a mechanical support. This, in spite of a somewhat flail-like action of the foot, it retained the ability to do with an efficiency quite unlooked for. As regards cutaneous sensibility, there was complete loss below the knee, except so far down the back of the leg (supplied by the small sciatic) and along the inside of the leg and foot (supplied by the long saphenous nerve). It is greatly to be regretted that the history of the patient since this time cannot be obtained. He did not again report himself, and all endeavours to trace him have been unsuccessful. The case is therefore incomplete, as we do not know whether any return of the disease has taken place or whether the limb has remained in the comparatively satisfactory condition in which it was six months after the operation.

CASE 2.—Thomas E. T——, aged thirty-seven, was admitted into the infirmary in July, 1889, on account of a tumour, the size of a small melon, under the gluteus maximus of the left side. It had been noticed for four months, and was growing rapidly. There was severe and constant pain down the leg. The patient was the subject of molluscum fibrosum from childhood. When the tumour was excised it was found to have originated in the great sciatic nerve, the strands of the nerve being stretched over and incorporated with the capsule of the tumour. The small sciatic was lying over the tumour and was pushed aside. To remove the growth it was necessary to divide the whole thickness of the nerve close to the notch above and at the border of the gluteus below. By dint of stretching and extreme flexion of the knee and extension of the hip it was possible to bring the divided ends of the upper portion and of one half of the peripheral part together, and suture them with strong catgut. The remainder of the peripheral end could not be brought up. In order to lessen the strain upon the sutures as much as possible, until the wound was soundly healed, the patient lay in bed, almost upon his face, with the hip fully extended and the knee fully flexed. The wound healed by first intention, and needed dressing only once for the removal of the drainage-tube. The tumour was of rather soft consistence, and on microscopic examination proved to be a round-celled sarcoma. (Fig. 2.) The

FIG 2.

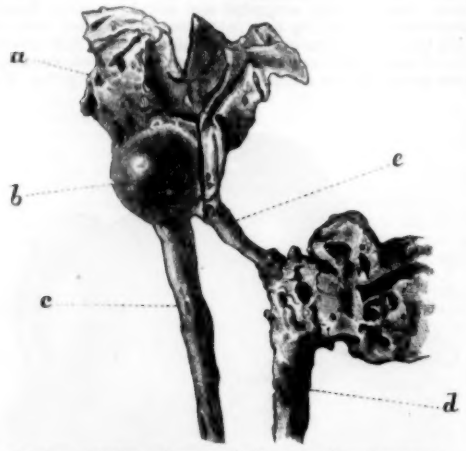
Sarcoma of great sciatic nerve.

patient on first getting up had difficulty in putting his foot to the ground, apparently owing to the shortening and tightness of the sciatic nerve. This feeling of tightness gradually gave way, and the power of walking steadily improved. But at the time of his discharge from the hospital at the end of August there was no return of cutaneous sensibility, and there was complete paralysis of all muscles supplied by the great sciatic. From the date of his discharge the limb was not again examined till Dec. 5th. The note then made as to its condition was as follows: "The patient walks almost without limp. Very little atrophy of the muscles has occurred, and cutaneous sensibility exists everywhere except on the dorsal and plantar aspects of the toes. The hamstring muscles contract, but he cannot flex or extend the foot at the ankle." The patient was again seen in the following May (1890). He was then in good health, and employed as storekeeper at the gas company's works, a post which required him to be on his feet all day. The condition of the leg had improved rather than deteriorated, except that the skin sensibility of the foot was again almost lost. It was normal, or nearly so, down to the ankle, and in the sole of the foot enough was retained to enable him to *feel* when he stepped on a stone or uneven surface. There was no increase of atrophy,

the difference of measurement of the two limbs taken above the knee and round the calf being barely an inch. There was no sensible coldness of the leg, no blueness of skin, and no trophic ulceration. The nails were not altered.

In the ensuing December he sought readmission to the infirmary. For some weeks he had noticed a lump on the right side of the chest, and he had been steadily losing flesh and strength. The lump was of some size, lying upon and attached to the ribs from the fifth to the ninth, and there was pleural effusion in the right chest. The leg was in practically the same condition as had been noted in May. There was no recurrence of tumour in the site of the operation. As the growth in the side increased in size, emaciation went on till it became extreme and the patient was little more than a skeleton. Towards the end he suffered greatly from pain at the back of the head, alternating with drowsiness. He died on March 1st. At the necropsy the thoracic tumour was found to have originated in the pleura, which was greatly thickened, and to have infiltrated the sternum. Nodules, or small tumours, were found in several of the intercostal nerves, in the liver and left lung, and in the left humerus. No tumour existed in the brain. At the site of operation the left sciatic nerve was carefully dissected out, and the following was found to be the condition and relation of parts. (Fig 3.) At the

FIG. 3.



To show relations of great sciatic as found post mortem: (*a*) Central portion of nerve, surrounded by cicatricial tissue, and ending in (*b*) nodular swelling; (*c*) portion sutured, and continuous with central portion through nodular swelling; (*d*) portion of nerve unsutured, connected to side of nodule by (*c*) band of cicatricial tissue.

level of the tuber ischii the nerve divided into two portions. The internal of these passed into a nodular swelling, which was continuous upwards with the trunk or proximal portion of the nerve. The outer was lost in cicatricial tissue, by which it was attached to surrounding parts and to the side of the nodule. The whole thickness of the lower end of the central portion was continuous with the nodular swelling. The latter had evidently formed at the line of suture with that part of the peripheral division of the nerve which it had been possible to bring into contact at the operation. The nature of this nodular swelling is of much interest. Different portions of it have been stained and examined, and in none is there any reproduction of the structure of the original tumour. It consists altogether of nerve tubes and fibrous tissue.

CASE 3.—On Dec. 4th, 1890, an injury to the left arm, involving the ulnar nerve, brought again under observation a patient (Joseph J——) who had been operated on in 1886 for tumour of the internal popliteal nerve, and whose case was reported in THE LANCET of Aug. 21st of that year. An opportunity was thus afforded of testing the condition of the leg nearly five years after the operation. (Fig. 4.) The removal of the tumour had involved the resection of three inches of the nerve, and at the date of being last seen the condition of the leg had been one of complete paralysis of all parts, cutaneous and muscular, supplied by the internal popliteal nerve, with the following exception. The small muscular branches going one on each side to the heads of the gastrocnemius were seen at the operation to be given off on the proximal side of the tumour, and escaped division. Some power to contract the muscle and to extend the foot at the ankle was therefore preserved, but only to a very slight degree. The ability to flex the toes was altogether lost, and there was complete anæsthesia of the sole of the foot. When seen last December all this lost power had been entirely regained, and the recovery from the account given by the patient had been very gradual. Cutaneous sensibility of the leg and sole was now almost as good as on the other side (the only difference to be detected being a slight impairment in the centre of the sole), and all movements of the ankle and toes were perfect. There was no wasting of the muscles. The patient has been several times examined since December, and was shown to the members of the Northumberland and Durham Medical Society at their meeting in March, so that the restored condition of the limb has been fully tested and verified. At the operation the divided ends of the nerve could not be brought together, and they were left unsutured. Reunion or regeneration must therefore have taken place across a gap of at least three inches. The pos-

FIG. 4.

Sarcoma of the internal popliteal nerve.

sibility of such regeneration taking place between widely separated ends is referred to in one or two of the text-books, and Mr. Anthony Bowlby in his standard work on Diseases and Injuries of the Nerves has given three instances. Quoting Mitchell and Bertolet, he states that partial reunion occurred after excision of an inch of the median and musculo-spiral; in a second case after removal of an inch of one of the digital nerves; and in a third, after excision of two inches of the radial nerve. Leaving out of consideration for the moment the still disputed primary union, it seems to be accepted that the reunion and regeneration of divided nerves are effected by the formation of new axis cylinders which may be developed from the nuclei of the sheath of Schwann even in the case of degenerated nerves. If it be true that this new development of axis cylinders and consequent regeneration take place both in the proximal and distal ends, reunion of these ends may possibly be accomplished by a process of growing towards each other. This process would be helped by the presence of tissue capable of serving as a kind of scaffolding along which the new formation could advance. It is conceivable that the delicate spindle-celled tissue which unites the ends in cases of secondary union acts in this way, and that the portion of nerve introduced in nerve grafting and the strands of catgut, which have been recommended as a bond between divided ends which cannot otherwise be approximated, really fulfil the same function. In like manner, growth

and approximation may be accomplished where only the connective tissue of the cicatrised wound is interposed. In all this, investigation and experiment lag behind clinical experience, and while it is known that function can be restored after the excision of even a considerable portion of a nerve trunk, the mode in which this regeneration is brought about has yet to be determined.

Newcastle-on-Tyne.

ON LENTICONUS.

BY LAWFORD KNAGGS, M.C. CANTAB, F.R.C.S.,
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"LENTICONUS" is the term used to describe a peculiar alteration in the shape of the crystalline lens, which consists, as the name implies, in the formation of a conical protrusion from its surface. It may be that in some instances the abnormality is congenital, but it is certain that in others the defect is developed during life. In the Archives of Ophthalmology (1889, vol. xviii., p. 451) Dr. H. Knapp of New York has given abstracts of the three previously recorded cases, and has added a fourth. For the purposes of this article the main features of those cases are here briefly recapitulated.

1. *D. Webster.*—Male, aged twenty-four. Oblique illumination showed a well-marked conical projection in the central part of the anterior capsule. "There was a small posterior cataract, and the whole posterior capsule was dotted over with very minute opacities, radiating from the posterior pole of the lens. The affection was alike in both eyes, and if it was not congenital it certainly was acquired in early youth." The patient "could read J. 1 from a distance close by up to 3 in., with $-\frac{1}{2}$" and a cylinder = V = $\frac{20}{200}$ in each eye.[1]

2. *Van der Laan and Placidus.*—Male, aged twenty-three. Anterior lenticonus producing high myopia, whilst the peripheral part of the lens showed H = 3 D. The condition was said to have existed eight years, and developed gradually. No statement as to whether one or both eyes were affected.[2]

3. *F. Meyer.*—Boy, aged ten. Left eye normal. Right eye had squinted outwards for three or four years, but defective sight had been accidentally discovered only nine months previously. "A conical elevation was seen to project from the posterior pole of the lens into the vitreous, bearing on and around its apex three white little patches" (posterior polar cataract). Vision improved by −12 D.[3]

4. *H. Knapp.*—Healthy girl, aged eight. Left eye normal. The sight of the right eye was found defective only on examination by an oculist. Fingers at 12 feet, with $-\frac{1}{10}$, sight = $\frac{2}{200}$. Lenticonus posterior and central. By focal illumination the abnormality could not be detected. No posterior polar cataract; whether congenital or acquired, stationary or progressive, was uncertain.

The following case, which differs in some important points from the foregoing, is at present attending amongst my out-patients.

E. W——, aged sixty-five, had good vision till six months ago. Her daughter stated that it would be four years since she astonished her family by reading a newspaper pasted upon a wall about a yard and a half away from her. At Christmas, 1890, her attention was directed to her sight because she was unable to recognise the minister at chapel or people in the street. She could see to sew and read as well as ever. She first sought advice on April 27th, 1891. On external examination there was nothing abnormal except a greenish haze of both lenses. Vision: Right eye = $\frac{6}{\text{nil}}$, c − 10 D, and − 1 D cyl. = $\frac{6}{12}$ fairly. Left eye = $\frac{6}{\text{nil}}$, c − 11 D = $\frac{6}{18}$. She read J. 8 at a distance of 4 or 5 in. without glasses. There was metamorphopsia, smaller objects being multiplied or distorted, but larger ones confused. On dilating the pupils with homatropine the following pathological condition was found to be present, and equally advanced in both eyes. The cornea was of normal curvature and perfectly healthy, except for a faint but complete arcus senilis. On focal illumination in the centre of the pupil there was a greenish-yellow circular opacity sufficiently defined to be measured (diameter = 4·5 mm.). It was most dense at the centre, but at its periphery blended rapidly with the greenish-yellow tinge of the lens substance. The appearance was not very unlike that presented by nuclear cataract, for which by this method of examination it could have been mistaken, but the opacity was evidently at the posterior surface of the lens. On examining with the ophthalmoscope at a distance of three or four feet by the direct method, a clear uniform red reflex was obtainable; with slight manipulation of the mirror, dark shadows could be made to play round the central point of the lens, but always leaving a narrow zone of red reflex between the periphery of the shadow and the margin of the pupil. Approaching to about twelve inches distant, a disc with a diameter of 5·5 mm. was seen centrally placed in the pupil; it was of a slightly duller red than the peripheral part of the reflex, from which it was marked off by a faint circular shadow, which varied somewhat on movement of the mirror, and sometimes took a reddish tinge, due to the retinal vessels. The shadows already described as circling round the central point of the lens were formed entirely within this disc, and a more careful observation showed that they were similar to those formed by keratoscopy in a myopic eye—viz., moving with the mirror,—but instead of the edge of the shadow being straight it was crescentic, and the two ends of the crescent embraced the centre of the disc. Opacities were seen floating in the vitreous, and they sometimes appeared to be deflected from a straight descent, and to fall along the edge of the disc. Kaleidoscopic movements of the vessels, similar to those seen in cases of conical cornea, were very distinctly seen within the disc, and on the observer moving his head the general movement of the vessels was in a direction opposite to that in which he moved. Outside the disc the vessels were not visible. With the ophthalmoscope close up the disc offered in some positions a distinct bar to observation; but in others, with the help of a strong minus lens, the details of the fundus could be clearly seen without any difficulty, but more or less altered. Kaleidoscopic movements of vessels were best seen when looking at the optic papilla, but if a single vessel was watched the central part of the observed portion could be seen to change from a concavity to a convexity, as the observer's eye was moved from side to side. Though the vitreous contained opacities it was not abnormally fluid. The fundus was healthy. Besides the defect of sight, she complained greatly of pain in the nape of her neck, for which there was no obvious cause, and she suffered from oxaluria. (Urine: sp. gr. 1015, acid; no albumen, no sugar, no phosphates. Microscope: numerous oxalates and a few masses in the shape of casts, and composed of small oxalates: some pus cells, and vaginal and bladder epithelium.) She had been deaf since she was twenty-seven. The other organs were healthy. She was ordered − 7 D for all purposes, and with the improvement in distant vision thus obtained she is quite satisfied.

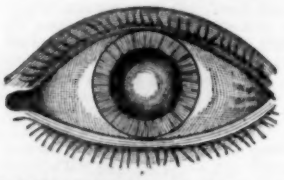
In the Ophthalmological Society's Transactions for 1889, vol. ix., p. 113, Mr. R. W. Doyne describes "a peculiar form of lens degeneration." The description of the condition is very similar to that already given of the case of E. W——. The patient was a woman, aged seventy, whose sight had been failing for some years. Focal illumination produced "the appearance of quite a dense nuclear opacity," but "the nucleus of the lens offered no interference to the passage of the rays of light through it, but around it there could be seen a shifting shadow such as is observed in cases of conical cornea." There was a sharply defined difference of 11 D between the nucleus and the cortex, the refraction of the cortex being − 3 D, and that of the nucleus − 14 D, with which lens V = $\frac{6}{36}$. In the general index for vols. i. to ix. this case is described as "lenticonus." Mr. Hartridge, on page 115 of the same volume, refers to a young lady, aged seventeen, whose lenses were perfectly transparent on oblique illumination, "but on looking at them with a concave mirror it was seen that the lens was composed of two distinct parts, the central nuclear part looking like a large globule of oil." "The refraction through

[1] Archives of Ophthalmology and Otology, vol. iv., p. 382.
[2] Abstract in Nagel's Jahresbericht, 1889, p. 369. Period. de Oftalm. Prat., Rivista bim., Lisbon, No. 3, 1880.
[3] Hirschberg's Centralblatt f. Aug., Bd. xii., p. 41.

the centre of the lens was 5 D stronger than the refraction through the margin." The condition was congenital.

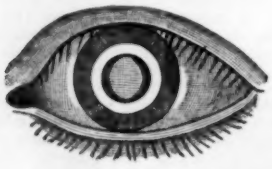
But little appears to be known of the pathology of this condition. Professor O. Becker of Heidelberg examined the eye of a rabbit, in which the lens showed a conical protrusion in the region of the posterior pole, and in which apparently healthy lens fibres were covered with normal lens capsule.[4] In three cases (Van der Laan's, Doyne's, and the writer's) the disease was undoubtedly acquired; in the others it appeared at so early an age that a suspicion of congenital origin was raised. Its occurrence in one eye only makes it probable that it may be traced in certain instances to some purely local defect, but when both eyes are simultaneously affected a general constitutional cause is to be suspected, and in E. W. the oxaluria was probably an expression of general deterioration of health. There is sufficient evidence in the recorded cases to justify

FIG. 1.



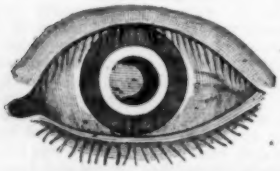
The central opacity seen on oblique illumination. The depth of the opacity from the anterior surface of the lens is not well shown.

FIG. 2.



The oil-globule-like disc seen by transmitted light.

FIG. 3.



The crescentic shadow, produced by keratoscopy, within the disc.
(The above sketches are slightly diagrammatic.)

the assumption that the immediate cause of lenticonus is a weakening of the lens capsule, rendering it unequal to restrain the natural elasticity of the lens substance. In every instance the cone has developed at the centre of either the anterior or posterior surface of the lens. Here, where the lens is thickest, its elasticity is probably greatest, and the capsule is likely to be weaker because the poles are furthest away from the circumference of the lens, where the capsule is strengthened by fusion with the fibrillar elements of the suspensory ligament. The occasional coexistence of posterior polar cataracts (two cases) is in favour of this assumption. It is true that in Webster's case the cones were anterior, and the opacities affected the whole of the posterior surfaces; but the inference is not unfair that both conditions pointed to the same thing—viz., a diseased capsule. It is easier to explain lenticonus by a defective capsule than by the supposition of some morbid change in the lens fibres. For the latter hypothesis it would be essential to assume a change of such a nature that would not obstruct the transmission of light, and would lead to a swelling of the lens in the situations in which lenticonus is always observed. Both suppositions are contrary to what we should anticipate if the lens substance were really diseased; and Professor Becker's observation gives them no support. If the explanation suggested here is the true one, we should expect the condition to be progressive only up to a certain point. However weak the capsule might be, the protrusion would cease to increase as soon as the lens substance had expanded to the full extent of its elasticity, while intermediate stages might result from the retention by the capsule of a variable amount of restraining power. In the cases referred to above there is nothing opposed to this view, whilst the length of time that the condition had existed in the first two cases would favour it.

The treatment of lenticonus will vary with the particular case. When one eye only is affected and the other eye is good it may be wiser to leave it alone. In early life, when the condition is symmetrical and calls for treatment, the lenses may be removed by discission or suction. In later life, and where the condition is acquired as a consequence of impaired health, it may be best to palliate with glasses rather than run the obviously greater risks of removal of both lenses in their capsules. This is the plan I have adopted with E. W——. In her case the metamorphopsia is the only symptom which would suggest a more radical treatment, and it is so slight a trouble to her that to expose her to the risks of an operation would be undesirable.

In conclusion, the points which enable a diagnosis of lenticonus to be made, when the cone cannot be rendered visible by focal illumination, are the following:—1. The oil-globule-like disc. 2. The great difference of refraction between the margin of the lens and the central portion, the latter being always highly myopic. 3. The kaleidoscopic movements of the retinal vessels. 4. The exclusion of conical cornea.

Leeds.

[4] Knapp's paper: Zur Anatomie der Gesunden u. Kranken Linse, p 126. Wiesbaden: J. F. Bergmann.

A CASE OF "ANTHRAX" SUCCESSFULLY TREATED BY EXCISION AND MERCURIAL IRRIGATION.

BY J. A. HUTTON, M.B., B.S., M.R.C.S., L.R.C.P.

As cases of "anthrax" or "malignant pustule" are of such rare occurrence that the majority of practitioners pass through a lifelong active practice without being called on to deal with a case, and as severe cases are so very frequently fatal, I thought it would interest the readers of THE LANCET to have the following successful case brought before them.

J. H——, a stout, ruddy-faced, well-knit, healthy-looking man, a veterinary surgeon by profession, practising in a village a few miles from Scarborough, on the night of Feb. 11th, 1891, was called to see an Irish heifer suffering from what was diagnosed as, and subsequently proved to be by post-mortem examination, splenic apoplexy. On his arrival the animal was dead, and the owner was anxious the carcase should be bled, so that it might be sold in the usual way. The animal being dead, the division of the smaller vessels failed to remove the blood; therefore an incision was made into the thorax and the aorta divided. The carcase was next placed in various positions to facilitate the flow of blood. J. H—— was assisted by R. P—— and G. B——, and during their manipulations with the carcase all three managed to scratch themselves slightly. The subsequent history of these two assistants is extremely interesting. On Feb. 15th R. P—— began to feel ill, with extreme swelling of the arm and an angry "lump" at its lower part. Despite the vigorous treatment by the village surgeon, he grew gradually worse, and died on the 19th, exhibiting all the signs and symptoms of a severe attack of anthrax. On the 21st G. B—— became affected with great swelling of the inoculated arm and pyrexia. The arm was incised and cauterised by the local surgeon, with the result that he has made a slow but complete recovery. On the 17th J. H—— noticed a slight papule at the site of inoculation on the lower part of the right forearm, and felt very ill, with high fever, loss of appetite, swelling of the limb, and pain. The papule was surrounded by a zone of inflamed

skin and subcutaneous tissue, and felt very painful. Fearing something serious might be happening, he himself applied strong carbolic acid to the papule and parts around. On the 19th he was decidedly worse, and had been compelled to lay up for two days. On the 20th he came to Scarborough for advice, and that was the first time I saw him. He gave the above history, and on examination I found him partially collapsed, with temperature 104·2° F., pulse 120, flushed face, moist skin, and complete anorexia; tongue dry, and coated with a whitey-brown fur. On the back of the right wrist there was an irregular area of superficial slough produced by the strong carbolic acid he had applied two days previously. Closer inspection revealed the presence of a deeper slough, circular in outline and about the size of a sixpence. In colour it was black, with dry surface and surrounded by an incomplete ring of vesicles. The adjacent skin was indurated, swollen, and red over an area of four inches. The whole hand, forearm, and lower half of the arm were very much swollen and œdematous, and red lines could be seen extending from the wrist up to the middle of the arm. Although the history and physical signs made the case clearly one of anthrax, such a diagnosis was not made till the serum in the vesicles was examined microscopically. I therefore quickly prepared a specimen, and on examining it with the microscope found enormous numbers of anthrax bacilli, thus making the diagnosis certain. During the time the specimen was being prepared and examined the whole extremity was covered with glycerine and belladonna and enclosed in a hot lead and opium poultice. At 8 P.M. the same day he was manifestly worse. The central black slough had apparently increased in size, and the swelling of the limb was more marked and harder. I therefore decided to do something more radical.

The patient being anæsthetised (chloroform) the slough with the vesicles and underlying subcutaneous tissue was excised, and the wound freely rubbed and irrigated with solution of corrosive sublimate (1 in 500). The tension of the limb up to the middle of the arm was so great that I feared sloughing would occur unless it were reduced. Six incisions were therefore made, each about two inches long, in various parts of the limb, and each was freely rubbed and irrigated with the mercurial lotion. Iodoform was dusted on, excess of Hartmann's wood-wool applied, and the limb put at rest on an angular splint. He passed a fair night, being very sick from the anæsthetic. The following morning his temperature was 100°, pulse 96, and he expressed himself as feeling better, although still sick and restless. The dressings were saturated with blood-stained serous discharge, as was also the greater part of the bed-clothes. The discharge had been much more profuse than was expected. The limb was still swollen, but pitted on pressure, and the redness and pain were less. The condition of the excised part was satisfactory. All the wounds were again rubbed and irrigated with the mercurial solution (1 in 500), and dressed with excess of wood-wool. The limb was similarly dressed every day for a week with a mercurial solution of 1 in 1000 instead of the one previously used, at the end of which time his temperature was 99·4°; pulse 84, of good volume; and respiration 18. The swelling and œdema, though less, were still conspicuous, and the skin on the upper part of the inner side of the forearm and over the front of the wrist looked dusky, as if it were going to slough. None of the wounds showed any signs of healing. The red lines of lymphangitis were not seen. On March 10th it was evident that a patch of skin as large as the palm of the hand, situated on the inner side of the upper part of the forearm, was going to slough, as was also a strip, two inches by half an inch, on the front of the wrist, and two circular patches of the size of a shilling on the back of the forearm. The wound resulting from the excision of the pustule showed signs of healing; the other wounds did not. Limb still œdematous. The sloughing parts were poulticed with hot lead and opium, and daily washed with hot mercurial lotion (1 in 1000) till the sloughs separated, which they did on the 16th. The large slough extended through the deep fascia, and on its removal the superficial layer of muscles was exposed. About this time signs of mercurial salivation appeared, the patient constantly spitting; teeth felt loose; breath foul, and an irritable red papular rash developed all over the body, which caused him much distress. He felt low-spirited and prostrate (mercurial erethism). All mercury preparations were now stopped. A lotion of one drachm of creolin with eight ounces of water was applied to the skin, and the wounds irrigated with saturated boric acid solution. On the 18th, the œdema being much less and the granulations pale and flabby, a healing process was attempted by the application of red lotion to the eleven raw surfaces, and the internal exhibition of tonics. At first no success attended the treatment, and the patient seemed to be in a stationary condition. On the 26th all the wounds looked healthy, and were smaller in size. Two of the primary skin incisions were brought together with silver wire, which unfortunately caused the skin to slough in the region where they were applied; œdema much less. All went well until the beginning of April, when he had sufficiently recovered to be able to go out for a few hours every day, when he caught cold, which kept him in bed for ten days, with cough and slight fever. Temperature 99·4°. The abdomen swelled a little, and the physical signs of ascites were elicited.

On April 15th he was again convalescent, with the smaller wounds completely healed. Temperature normal. The remaining raw surfaces were treated with red lotion, and the patient expressed himself as feeling quite well. On May 1st all the wounds were healed, but the wrist and fingers felt very stiff. Forcible movement of the parts with massage had brought about complete restoration of the function of the limb. I last saw him on June 12th, 1891, when he passed out of my care to follow his profession, that of a veterinary surgeon.

Scarborough.

ON THE

MORBID ANATOMY OF THE PANCREAS.

BY ERNEST T. NEVE, M.D., F.R.C.S. EDIN.,

FORMERLY SENIOR ASSISTANT IN THE PATHOLOGICAL DEPARTMENT, EDINBURGH ROYAL INFIRMARY.

IN some respects, the pancreas may be regarded as an almost untrodden field of research. As far as ordinary post-mortem examinations are concerned it is so. And yet when I began to study the subject, I found the bibliography very extensive. In Ziemssen's Encyclopædia alone, the number of works and monographs referred to in connexion with the pancreas is quite surprising. On consulting the literature of the subject, however, this fact is sufficiently obvious—that, however fully some of the clinical aspects and microscopic appearances of various forms of disease in this organ have been discussed, there still remains a large area—the minute morbid anatomy—which has been but little explored hitherto. Indeed, with the exception of the late Dr. Handfield Jones and Dr. Norman Moore, there have been almost no pioneers in this direction.

The cases examined by me may be divided into two series. In the first, I examined the organ macroscopically as a routine practice, but only removed portions for histological investigation when morbid conditions were present or suspected. In the second series I dissected the pancreas to find the relations of the portal vein and ductus communis choledochus. I measured the organ in three diameters, registered its weight and naked-eye appearance, and finally examined sections of it microscopically. Most of the cases were examined in the Royal Infirmary. A few specimens were obtained from necropsies conducted in connexion with the Royal Hospital for Sick Children and the Cowgate Dispensary, Edinburgh. In the first series twenty-two cases were examined. In the second series I investigated sixty-five pancreases. I formed my standard of health chiefly from those fatal accident cases in which all other abdominal organs were healthy, and therefore *a priori* the pancreas also. For hardening purposes, a saturated solution of picric acid was found best. When the gland was very soft and diffluent, I found absolute alcohol necessary. The instances (in the second series) in which the pancreas was found apparently healthy were: (1) a case of œdema of the lungs, with uræmic symptoms before death; (2) cancer of uterus; (3) rupture of bladder; (4) cancer of the stomach; (5) rupture of bladder; (6) aortic aneurysm; (7) rupture of spinal column; (8) general cirrhosis; (9) cancer of stomach and gangrene of lung; (10) peritonitis after operation for imperforate anus; (11) advanced chronic phthisis; (12) aortic aneurysm; (13) bullet wounds of abdomen, peritonitis, &c.; (14) fatty heart. It is possible that some

of the cases placed in the category of parenchymatous inflammation may have been healthy and only altered post mortem. With regard to cirrhosis, too, it must be borne in mind that in an organ of such loose texture the amount of interstitial tissue is apt to vary greatly.

The question of post-mortem alterations in the pancreas required to be faced. I therefore made a series of experiments with four pancreases, keeping portions of them for twelve, twenty-four, and forty-eight hours, and exposing them for part of the time to a temperature of 100° F. I was able to satisfy myself, upon microscopic examination of these and comparison of them with portions of the same organs not treated in this manner, that progressive disintegration had gone on, the tubules having gradually broken up, and the cells having become disintegrated and being no longer definable. In some cases crystals of leucin were present. Whether these changes were due principally to digestion or decomposition it is difficult to say; probably both processes were concerned. In either case it tends to indicate that during the period which elapses after death, especially if the temperature has been above normal immediately before, the pancreas may undergo disintegrative changes. There is a danger of mistaking such changes for degenerative or inflammatory lesions of the parenchyma. In health the average size and weight of the pancreas, according to my observations, are: Length, 7¾ in.; breadth, 1¾ in.; thickness, ⅝ in.; weight, 3¾ oz. The average transverse measurement of the follicles is 0·03 mm. The glandular cells measure 0·01 mm. to 0·0075 mm., and the nuclei 0·005 mm. to 0·00625 mm. In every case (of the second series) some of the microscopic sections were stained with hæmatoxylin, others were treated with methyl-anilin violet, and others with osmic acid solution, with a special view to the more complete investigation of the waxy and fatty lesions.

I.—NEOPLASTIC FORMATIONS.

1. *Tubercle.*—Six cases of tuberculosis were examined: of these, one died of tubercular meningitis, another presented profound tubercular ulceration of the intestine; the other four were pulmonary, and in one of these last there was general tuberculosis. The surface of the pancreas in this case was studded with miliary tubercles, but there were none in the interior of the organ; giant cells were present; no bacilli could be demonstrated. This was the only case in which tubercle of the pancreas was found.

2. *Sarcoma.*—I met with one sarcomatous tumour. This was taken from a man aged sixty-four. It was a somewhat flattened growth, involving the pancreas and the pyloric end of the stomach. Consistence, firm; colour, pale yellow. On section it presented a glistening and fibrous appearance, with small areas of slightly darker colour scattered over the surface—in fact, it looked rather like a scirrhous growth. But on microscopic examination the tumour was found to consist chiefly of highly nucleated spindle cells, interlacing at various angles. Some of the nuclei were oval, others circular. Their average transverse measurement was 0·005 mm. to 0·015 mm. There were no epithelial cells.

3. *Secondary Lympho-sarcoma.*—This was an example of a large primary new growth in the retro-peritoneal lymph glands, which had come into contact with the pancreas, to which it was firmly adherent. On section, the line of demarcation between them was very distinct; and yet, when examined microscopically, the new growth was found to have dipped down between the lobules of the pancreas, in which atrophic changes had taken place.

4. *Adenoma.*—In a female aged fifty a globular tumour in the region of the pancreas, flattened somewhat at both poles and measuring 2½ in. by 2 in. It was adherent to the duodenum, which was narrowed. Bile-duct included and much contracted. Whole pancreas hard; microscopically, trabeculæ of nucleated fibrous tissue. Spaces lined by small well-nucleated cells. In some places fibrous tissue presented scirrhous characters. Here and there were atrophied lobules of glandular tissue. In the centre of some of the alveolar spaces there are larger cells, some measuring 0·025 mm. These appeared later to lose their nuclei and become granular and yellowish masses, retaining their original shape. In some places glandular tubes (apparently newly formed) were to be seen packed with round cells. Others were older and full of yellowish structureless material.

5. *Carcinoma.*—In four cases the pancreas was the seat of cancerous growth of a scirrhous or encephaloid nature.

Primary Carcinoma.—Female, aged thirty-one. Obscure case. Heart fatty; lungs œdematous; great congestion and hæmorrhagic infarctions of the liver. The pancreas weighed four ounces; it was unusually firm and of congested appearance. On the surface there was a large hæmorrhagic infarction. I regarded it at first as a case of passive hyperæmia resulting in brown induration. But when I came to examine it microscopically I was astonished to find that the glandular tubules had disappeared, and the organ consisted almost entirely of a fibrous stroma containing in its meshes masses of cells. These cells varied in size from 0·0075 to 0·015 mm., and many of them were polynucleated. A few showed well-marked fatty degeneration. Some of the cells measured 0·02 mm. I believe that the condition was an early stage of primary carcinoma of the pancreas.

Secondary Scirrhus.—Male, aged fifty-four. General cancer of peritoneum, involving omentum, ureters, and the surfaces of the spleen, liver, and other organs. It was impossible to say which part was affected primarily. The surface of the pancreas was involved in a mass of new growth, which, however, was separated from the glandular structure by a thick band of fibrous tissue. The tumour was a typical scirrhus.

Secondary Scirrhus.—In another case the pancreas was involved in general scirrhous disease of the pyloric region. The stroma was composed of old fibrous tissue. The cells could be easily washed out. They were large, and measured from 0·035 to 0·25 mm. Their nuclei were well marked.

Encephaloid Cancer.—Male, aged thirty. General soft cancer of the peritoneum and abdominal viscera. The pancreas contained several nodes the size of hazel-nuts, globular, soft, and cream-coloured. Microscopically, the growths were found to consist of a fibrous stroma and vast numbers of nuclei varying in size, some of them being polynucleated. The appearances were quite characteristic of encephaloid cancer.

II.—EXTRA-GLANDULAR AND INTERSTITIAL TISSUE CHANGES.

1. *Fatty Infiltration.*—In seventeen cases this was present to a greater or less extent. These were as follows:—Three cases of gangrene of the lung, four of cancer (stomach two, rectum one, breast one), one each of heart disease with aortic vegetations, phthisis, alcoholism, hydatid of the liver, erysipelas, abscess of the liver, gall-stones, large inflammatory and cirrhotic kidneys, old-standing syphilis with intercurrent diphtheria, and one case of meningitis. This last was the best example of fatty loading. Male, aged twenty-two. Pancreas swollen and dark-red. Weight, 2½ oz. Bands of fat-bearing tissue (between the lobules), greatly increased in size, measuring in places 0·8 mm. A large number of infiltrating globules. In all the above cases the interstitial tissue was infiltrated with fat globules, which were fairly constant in size, varying from 0·005 to 0·01 mm.

2. *Cirrhosis.*—In thirteen cases an increase of the interstitial fibrous tissue of the organ was noted. In a case of diabetes the pancreas weighed 1½ oz, and was only 6 in. long; firm, crisp, cirrhotic, and atrophied. Occasional spaces measuring 0·1 × 0·1 mm., apparently due to dilatation of ducts. Large arteries well filled with blood clot. In another case the pancreas presented a similar appearance. Female, aged fifty, cerebral softening, granular kidneys, and hypostatic pneumonia. Pancreas wasted, pale, flat, short, and weighed 1½ oz. Lobules compressed by excess of fibrous tissue, ducts thickened. (I was unable to ascertain whether this patient had suffered from glycosuria.) In some cases this thickening of the ducts was well marked. Take, for example, the case of a female, aged thirty-four, who died of empyema. The pancreas was pale and flabby, and weighed 3½ oz. There was a considerable increase of interstitial fibrous tissue, and the ducts were thickened. For instance, one measuring 0·16 mm. × 0·46 mm. would possess a lumen of only 0·03 × 0·09 mm. In some cases, too, there was a strong tendency to cystic dilatation. In a male aged forty-two, who died of aortic aneurysm, there were a large number of circular spaces throughout the lobules of the pancreas. The average diameter of these spaces was 0·09 mm. They appeared to be dilated follicles and small ducts, some being lined by gland cells. Outside they were surrounded by delicate fibrous tissue with flattened nuclei. In one case the increase of fibrous tissue was due to a perforating gastric ulcer, which was fortunate enough to have secured the anterior surface of the pancreas as a new floor. In a

case of gall-stones, with general inflammatory thickening around, the pancreas had participated, and presented an increase of interstitial fibrous tissue. Amongst other cases in which there was cirrhosis of the pancreas were one each of cancer of the lung, lobar pneumonia, and caries of the spine.

3. *Diseases of Bloodvessels.*—Amyloid disease. I examined the pancreas in eight cases of general waxy disease. In one case in which the spleen and kidneys were waxy the pancreatic capillaries showed no sign of this disease. In the other seven the capillaries of the pancreas were affected, but with varying degrees of intensity. Thus in one case vessels of a calibre of 0·03 to 0·13 mm. were affected, while those of 0·2 mm. escaped. In another case, a child of seven, who died of caries of the spine, although the smaller capillaries were amyloid, I found that some measuring 0·03 mm. × 0·09 mm. were not affected. The methyl-anilin staining demonstrates the distribution of the capillaries exceedingly well. Not only did I find that the walls of the smaller ducts were lined with them, but also in two cases I noted appearances not very dissimilar to the renal glomeruli. There were circular patches of well-nucleated gland cells, with groups of anastomosing capillaries, occupying a definite relation to them, and occasionally what looked like a small central vein could be demonstrated. Fatty degeneration of the capillaries was present in several cases in which the gland tissue was similarly affected.

4. *Diseases of the Ducts.*—I have already pointed out that in cirrhosis thickening of the ducts is apt to occur. And in the same condition there is a tendency to cystic dilatation of the ducts. I have mentioned two cases in point, one of diabetes and the other of aortic aneurysm. In another case (also of aortic aneurysm) dilatations of the smallest ducts and gland follicles were present, forming spaces, some of which had coalesced, being only separated by atrophied walls. The diameter of these spaces was 0·3 to 0·1 mm. Some of them were lined by cubical endothelium. In a case of fracture of the skull, similar but smaller cysts were present.

III. CHANGES INVOLVING THE GLAND TISSUE.

1. *Cloudy Swelling and Parenchymatous Inflammation.*—I examined two cases of typhoid fever. In the first death was preceded by a high temperature. The pancreas was very soft and dark coloured, the cells cloudy, large, and granular; there was haziness around some of the bloodvessels. The second case died between the second and third weeks of illness. The glandular elements were swollen, and in some of the lobules there were small, circumscribed, cloudy masses of cells. Several other cases showed cloudy swelling of the gland cells. In all of these the patients had suffered from diseases in which the temperature had been elevated, and in most there had been acute septic affections. They were as follows:—Ulcerative endocarditis, 2; pericarditis, 2; peritonitis, 2; septicæmia, 1; acute tuberculosis, 1; tubercular meningitis, 1; puerperal eclampsia, 1; acute alcoholism, 1; and gangrene of the lung, 1. The cells appeared swollen, cloudy, and granular. In some places their contour was irregular, and they seemed disintegrated. In many instances the tubules could hardly be defined, and the cells were heaped together. In other cases, especially those of peritonitis, the perivascular spaces were infiltrated with leucocytes.

2. *Amyloid Disease.*—In no case did the gland cells show the presence of waxy infiltration. In one instance (caries of the spine in a boy aged seven) the pancreas was unusually pale and firm, and presented a somewhat waxy appearance. But it gave no reaction with the iodine and methyl-anilin violet tests.

3. *Fatty Degeneration.*—This was by far the commonest disease of the pancreas. It was present in no less than 29 cases, or 1 in 3 of those examined. These were as follows:—Diabetes, 2; cancer of stomach, 3; cancer of rectum, 1; cancer of mamma, 1; gangrene of lungs, 3; tuberculosis, 3; and one each of meningitis, lobar pneumonia, empyema, caries of spine, old standing syphilis with intercurrent diphtheria, fracture of skull, shock, large inflammatory and cirrhotic kidneys, abscess of liver, hydatid of liver, acute yellow atrophy, endocarditis, heart disease with aortic vegetations, aneurysm of aorta, old cerebral hæmorrhage, and erysipelas. In all these cases the glandular cells were degenerated to a greater or less extent, and contained numberless minute fatty globules, which were very clearly demonstrated by the use of osmic acid solution. In fifteen instances well-marked fatty infiltration was also present. In four there was cirrhosis, and in three the capillaries were affected with amyloid disease. I was unable to detect any characteristic macroscopic morbid appearance in these fatty pancreases. In weight, consistence, and aspect there was no distinguishing feature that I could determine.

Kashmir.

CASE OF DIPHTHERIA OR CROUP IN CENTRAL AFRICA.

BY JOHN BOWIE, M.B., C.M.

THE much-vexed question of the unity or duality of diphtheria and croup has been pretty well thrashed to rags, with the result, of course, that each party holds more firmly than ever to its own opinion. The microscope, experiments on animals, and many other points in their history greatly favour the belief that the two diseases are one and the same; while, on the other hand, the etiology and the clinical history of many cases render it difficult to accept their identity. The following case, which occurred thousands of miles away from any apparent possibility of infection, is, I think, of considerable interest.

J. M——, a little Scotch boy, three years of age, who had been two years out here, went with his parents in April, 1889, just at the end of the rainy season, from Blantyre to Zomba, a distance of forty miles. On the way it rained heavily, and the boy got soaked. At Zomba they remained a fortnight, living in a large well-built brick house, which had been uninhabited for more than a year. During their stay no fires were lit in the house, as the weather was warm. Towards the end of the second week the boy developed what the parents said was an ordinary cold, to which he was much subject; this had lasted about a week when I saw him on his return to his own home here. The little patient presented all the symptoms of a slight attack of bronchitis and laryngitis. We had his bed converted into a croup cot, and a plentiful supply of steam led into it. The breathing was easy and there was no change in the symptoms for two days, but when I saw him on the third morning there was more difficulty of breathing, the voice was whispering, and on the right tonsil was a small patch of membrane about the size of a pea. As the boy had vomited several times, only bringing up mucus, with no improvement in the breathing, I thought, though the symptoms were by no means urgent, that tracheotomy would give the best chance of recovery, and advised it to the parents, who, being people of education and great good sense, at once agreed. I therefore performed the ordinary high operation. In spite of an excellently acting croup kettle, repeated spraying with soda solution &c., the expectoration remained very scanty and difficult to bring up. Gradually the dyspnœa returned and increased, and the child died choked on the morning of the fourth day after the operation.

Post-mortem examination showed marked œdema of the larynx, which was everywhere lined with a very distinct false membrane, which stripped off readily in small pieces, showing no ulcerated surface below. Patches of similar membrane were found in the trachea and in the bronchi down to the third or fourth division. Several of the bronchi were plugged by masses, I suppose, of inspissated secretion and altered membrane, corresponding in colour and consistence to soft Russian toffy.

Remarks.—If we look upon this case as one of diphtheria, and if we accept the common teaching that diphtheria is due to a specific contagium, and that "those cases, which appear to originate *de novo*, probably always arise from the virus—often long dormant and forgotten—of previous cases,"[1] then it is one of very considerable interest, from the impossibility of tracing any such source of contagium, and from the extreme improbability of there being any such source. Although diphtheria has been found in several tropical countries, and though there is good evidence that it was familiar to Indian medical men in very early times, yet I do not know that it has been found amongst a people living in the healthy and primitive manner that they do here, where there are no wells to become contaminated, no drains

[1] Sir Morell Mackenzie, p. 124.

to go wrong, no accumulation of excrement around the dwellings—the wide African bush being their rear,—where no house is more than two or three years old, where, whenever a death occurs in a house, that house is burned to the ground, &c. My own experience here, though not extending over many years, extends over many thousand cases of sickness in adults and children, and I have never seen any case which even by the most elastic diagnosis could be called diphtheria. I have also the word of two other doctors, who have been much longer in the country than myself, that they have never seen a case. Though of course this does not prove that diphtheria does not occur amongst the natives here, it entitles us, I think, to hold by the negative till a positive is proved. As regards the white community here, it is so very small that the history of almost every individual who has been here since the opening up of the country by Livingstone in 1859 might be traced. For nearly four years every white person has been under my own medical care, and, except this case, I have never seen anything like diphtheria. When the little boy left here he was in excellent health. The road by which he went and returned is through the bush, and passes no native villages. The house at Zomba in which he stayed is a new one; by no possibility could the slightest suspicion of a case of diphtheria be traced to it. I know every white person who ever entered it. The drinking water is obtained from a large rapid stream which rushes precipitately for many hundred feet down a gorge of Mount Zomba. Between the house and the place where the stream issues from the gorge there are no native houses, so that contamination of the water is impossible. In the house there are no water-closets, no fixed-in basins, no civilised conveniences of any kind. There is one other European house at Zomba; it is inhabited by three brothers, whose medical history I know, and there is no suspicion of any case having occurred there. There are no native huts within a considerable distance of the house at Zomba.

This case then presents, perhaps, as good an example as it is possible to get of diphtheria arising, probably, *de novo*. But what would constitute "arising *de novo*"? Diphtheria, like every other disease, is the anatomical alteration and clinical manifestation resulting from some irritant acting on the body. It is the reaction of the organism to that irritant. Varied as the reactions of the human body are, they are not infinite; they are limited by the physical and physiological conditions of the body &c., thus every irritant does not produce a different reaction. A dozen irritants applied to the eye may cause a simple inflammation—conjunctivitis. A dozen irritants applied to a motor nerve may cause the one reaction, muscular contraction. Even though we admit that diphtheria is caused by a micro-organism, it does not necessarily follow that it is only caused by one particular organism, and never under any conditions by any other organism. Nor does it even follow that the particular organism must under every condition cause the body to react in the same manner. There are many observations and experiments which tend to show that one disease may be caused by many different micro-organisms, or, in other words, that several micro-organic irritants cause the body to react in a similar manner. Thus tuberculosis, apparently identical with the ordinary disease in man, has lately been produced by many experimenters with micro-organisms absolutely different from Koch's well-known one. Croupous pneumonia, though perhaps most frequently caused by Fraenkel's pneumonia coccus (the micrococcus Pasteuri of Sternberg, the lanceolate coccus of Talamon), is considered by many excellent observers to be occasionally caused by other micro-organisms. The pneumonia of typhoid fever is held by some to be caused by the microbe of that fever. So with ulcerative endocarditis and many other diseases caused by microbes. There are also very many observations and experiments which show that one micro-organism may cause very different diseases, or, in other words, one micro-organic irritant causes the body to react in very different ways. The variety of reaction may depend upon: 1. The method of introduction of the organism. Some microbes injected under the skin cause but a local lesion, whilst if injected into the circulation they cause an infection of the whole organism. 2. The condition of the micro-organism at the time of injection, almost all microbes varying in virulence at different times. 3. The variety of animal experimented upon. 4. The age, colour, and condition of the special animal; for example, the microbe of charbon will in young rats generally cause septicæmia, whilst in old rats it generally simply produces an abscess &c. Staphylococcus pyogenes aureus found in boils, abscesses, &c., is also found as apparent cause in osteomyelitis, in parasitic sycosis, and in some cases of ulcerative endocarditis. Many observers have found the pneumonia coccus of Fraenkel in the exudation of pleurisy, meningitis, otitis, and peritonitis, which arose in consequence of pneumonia, and sometimes long after the pneumonia had disappeared. Senator gives, in the *Berliner Klinische Wochenschrift* of June 17th, 1889, a very interesting case of a young lad who, on Oct. 19th, 1888, suffered from left-sided pneumonia, which ended on Oct. 27th with free perspiration and herpes. For some time he then suffered from otitis media duplex, then from an erysipelatous inflammation of the face. On Jan. 24th, 1889, suddenly meningitis with high fever supervened, which gave place on Jan. 28th to herpes and right-sided pneumonia. Senator explains these as all arising from the pneumococcus, which had remained during all that time in the body. Innumerable instances might be given, but I think, considering the immense strides bacteriology has made, and the greater strides it is likely to make, we are at present hardly justified in holding that diphtheria is caused in all cases and under all circumstances by the same organism.

If the diphtheritic reaction may be caused by several micro-organisms, this case is not so difficult of explanation, especially as the house at Zomba in which the patient stayed must have been exceedingly damp, and thousands of spores of various fungi and other low organisms would be floating about in the air. In the European houses out here during the rainy season we find it most difficult, even by the use of huge fires, to keep down the mould and fungus which tend to grow upon everything. Now there had been no fires in the house at Zomba, and during the whole rainy season the mould and fungus had it all their own way. Let me briefly consider why the diphtheritic reaction, having once occurred here, does not occur again, and particularly why it does not seem to occur amongst the natives. Taking the case as a bacteriological experiment, we find that this young boy was of a very different race from the natives here,—so different that he might almost be considered a different species. It may be the African is not very susceptible to the diphtheritic virus, or it is possible he may be so susceptible that, not offering a local resistance, he dies of a general septicæmia. I have seen a number of fatal illnesses here which I could only account for by the action of some such poison. Perhaps, then, by race this boy had a local disposition to diphtheria; perhaps by family he had a still stronger disposition. And, supporting this, I may mention that shortly before a cousin of this patient died in Scotland of diphtheria (croup). Then, again, this boy had a tendency to catarrh, and was suffering from catarrh when the diphtheria developed. Now, catarrh is considered as a favourable condition for diphtheria to develop. The natives here are markedly less subject to catarrh than we are—not from the absence of apparent cause, for the temperature is here sometimes as low as freezing point, and cold, wet days are far from uncommon. Yet, in spite of this, and in spite of his scant clothing, or perhaps because of it, a native with an ordinary catarrh is almost an anomaly. Nor are the natives exposed to the same conditions as this boy. The native huts are small, and have a fire constantly burning in them, so that even during the rainy season they are not damp, and mould, fungus, &c., get no chance to collect. Then if any case did occur, the virus has not much chance of lying dormant for any time. If the case be fatal the house is at once burned down; and even if the house remains after a case has occurred in it, it only remains for a year or two, and then vanishes from the face of the earth.

Of course, if we accept the duality of the disease, and consider croup as generally due to damp and cold, and as arising out of catarrh, then the case is very simple of explanation; but I hardly think this theory tenable. Catarrh itself is probably due to some form or other of micro-organism, and cold and damp are gradually getting a back place in etiology.

Blantyre, East Central Africa.

HOCKEY.—The Corporation of Cambridge has declared hockey to be dangerous and a nuisance to the public, and has prohibited the game to be played in the forthcoming season on Parker's Piece.

TOXIC EFFECTS OF COCAINE AND THEIR TREATMENT.

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A VERY few years ago the drug cocaine was comparatively unknown, and the discovery of its effect upon the cornea marks an epoch in therapeutics scarcely less important than that of the discovery of chloroform. Indeed, what chloroform is to the surgeon, cocaine may be said to be to the ophthalmologist. Besides the conjunctival mucous membrane, however, almost all the mucous membranes have been cocainised for one purpose or another, until the drug has justly been regarded as one of the most valuable in the British Pharmacopœia.

It is hardly to be expected that a powerful drug like this can be applied to the various mucous membranes without some absorption occurring and its physiological effects being manifested. It is to these effects carefully observed that I wish to devote a few words. In the account which follows no single symptom or sign is described that I have not seen and recorded at the moment, time after time. The drug used was the hydrochlorate of cocaine, and the mucous membranes those of the nose and mouth principally. Absorption does not readily occur from the conjunctiva unless an excess of the solution be used and has trickled down into the nose through the lacrymal canals and nasal duct. The Schneiderian membrane, which is almost erectile in structure in some parts, absorbs the drug rapidly. The local effect of cocaine upon this membrane is very marked. A patient presents himself suffering from a watery discharge from the nose, sneezing, lacrymation, and a very unpleasant irritation of his mucous membrane—in fact, all the symptoms of coryza. On examination with the nasal speculum the membrane is seen to be red, injected, and swollen, so that that covering the turbinate bones meets that covering the septum, and nasal breathing is impossible, the patient being obliged to breathe through his mouth. If now a spray be used, and a solution of hydrochlorate of cocaine (2 per cent.) be applied to the membrane, the latter will be seen to shrink, the discharge cease, the surface become pale and dry, and the cavity restored, so that nasal breathing can be accomplished with the greatest possible ease. This I have experienced myself time after time, and I have tried it in other patients with the same result. Does the drug act upon the muscular coats of the smaller vessels either directly or through the terminations of the vaso-motor nerves, or does it, by allaying the irritation caused by various substances such as pollen, remove the cause of the congestion, and thus relieve this very distressing affection? In this affection the relief is so marked that there is a tendency to over-use of the drug, and therefore to the occurrence of the symptoms to be presently enumerated.

I have used solutions of 1 per cent., 2 per cent., 4 per cent., 5 per cent., and 10 per cent., and of these the 2 per cent. would seem to be the best; but it must be applied by means of a spray, as in no other way can the recesses of the nasal cavity be reached. I may say that I have often used the drug for the purpose of observation only, and the symptoms about to be described came on when the drug was used for some time, disappeared on its cessation, and reappeared when the drug was resumed. As to the amount necessary to produce dangerous effects, I may say that I have experienced very unpleasant symptoms after less than one grain, and that the condition produced by six grains sprayed in for experiment was such as to elicit the resolve never to repeat the dose. Weak solutions appeared to be absorbed more quickly than strong ones, and therefore 2 grs. in 1 per cent. solution would seem to be more dangerous than the same quantity in 10 per cent. solution.

The symptoms may come on in a few minutes, and may last three or four hours, or even longer. In small doses a feeling of exhilaration is produced, and the mental faculties are stimulated. If the dose be increased largely, a kind of affective insanity may result. If the *spes phthisica* be regarded as a mild form of phthisical insanity, the condition produced by cocaine must also be regarded as such. It would appear to be a kind of mild mania, in which illusions, hallucinations, and delusions have not yet made their appearance. To say the least of it, the mental condition is not normal. Insomnia is a very important and distressing symptom, as those who have used the drug at bedtime know to their cost. A whole night may be spent without the slightest inclination to sleep; but, strangely enough, there is not so much fatigue next day as might be expected to result from the loss of a night's sleep.

The vascular system is affected by even small doses of cocaine. At first the pulse is strengthened and accelerated, but if larger doses be used it may become very weak and irregular, or even slower than normal. The usual result is a quick pulse, which may be found 120 per minute or more. I have often noticed a pulse of 120 after small doses of the drug. Concurrently with this effect upon the pulse there is commonly a sense of tightness in the chest. One feels as if the heart had contracted and drawn in the chest walls with it. This feeling of oppression is very often present, and is sometimes alarming, as there may also be a feeling of faintness, giddiness, or singing in the ears. One feels almost afraid to sit down, and on lying down there is a feeling of suffocation. The breathing is shallow and quick, often from 20 to 24 in the minute after large doses, and frequent sighing takes place. The whole condition is one of tension, like that produced by suspense. The surface of the body is pale, and often a cold sweat breaks out.

The temperature seems to be raised; I have seen it 99·2° on several occasions. But one of the most interesting effects of cocaine is the effect produced on the pupil. It occurs even when only one grain has been used. I have frequently produced it by a spray of one grain in a 1 per cent. solution. This is, of course, distinct from the local action on the pupil, and is the result of the absorption of the drug. No cocaine is applied locally to the conjunctiva, and yet the pupil dilates and accommodation is relaxed to a moderate degree, if one may judge from the feeling of fatigue produced by reading. If a lighted match be placed before the pupil the latter contracts. Then it oscillates, alternately contracting and dilating, until, as if unable to keep up against its stronger antagonist, the dilating force gets the mastery, and the pupil dilates. After a short rest the pupil can again be made to contract, but the abiding condition is abnormal dilatation. It would seem as if the sympathetic were stimulated, and therefore the third nerve, although not paralysed, must be at a disadvantage. Hence a stronger stimulus than normal is required to produce contraction, and the sphincter iridis becomes fatigued. Other symptoms, such as tremulousness and weakness of the knees, are often present.

With regard to the digestive system, cocaine—at least, when applied to the mucous membrane of the nose or mouth—produces complete anorexia. I have proved this beyond doubt, and have learnt to use no cocaine for at least two hours before a meal. If the use of cocaine be long continued, the tongue gets furred and wasting ensues. The urine is of two kinds. First, when cocaine is being used the urine is pale, limpid, and of a low specific gravity. I have noticed the specific gravity to be as low as 1009, when not an abnormal amount of fluid had been drunk. The urine is therefore similar to that of hysterical patients. On the other hand, after the use of cocaine for a day or two the urine becomes high-coloured and loaded with urates. The urates disappear when the drug is discontinued, and reappear when the drug is again used. In fact, cocaine seems to cause an increased metabolism, as shown by the increased pulse, increased temperature, wasting, and the deposit of urates in the urine.

There is one other symptom caused by the continuous use of cocaine, and that is cocaine craving. This is similar to that for alcohol, opium, tobacco, &c. In fact, after using cocaine for a few days, it may be necessary to exercise some strength of will to overcome the desire. A case of this kind is recorded in THE LANCET of Nov. 1st, 1890, p. 957. I had noticed this before I saw this case recorded, and I was glad to find that it is becoming a recognised symptom.

The treatment of "cocainism," a term which might be used to indicate the group of symptoms produced by cocaine, is very important. The sleeplessness is sure to cause great annoyance, as it is a very constant symptom. I have used opium, bromide of potash and chloral, bromide alone, and chloral alone. Of these, chloral gave the best results, and opium the worst. Of chloral, enormous doses must be given to produce sleep. It is in very mild cases indeed that twenty grains will be of any benefit. I have used forty grains of chloral and forty grains of bromide without producing sleep. The

bromide causes unpleasant symptoms next day, and therefore chloral alone is much preferable. This peculiar resistance to chloral of cocaine insomnia has already been noticed by Dr. Willoughby of London in THE LANCET of Feb. 14th, 1891, p. 365. When sleep is not produced a kind of nightmare may come on—a condition between waking and sleeping in which objects can be recognised and sounds distinguished. The pulse becomes more regular and the cardiac oppression is relieved. A large dose of alcohol in one not accustomed to its use is often very beneficial, and may produce sleep. If the pulse gets weak the best remedies are ether and ammonia, both of which drugs I have used with very good results. The craving can be got rid of by a few days' abstinence from the drug.

Dr. Gluck of Nebraska has discovered that phenol causes a very superficial eschar, and therefore when used with cocaine prevents the absorption of the latter. His observations are published in the *New York Medical Record*, June 21st, 1890, p. 707.

Greenwich-road, S.E.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

AN UNUSUAL FORM OF CHANCRE.

By E. D. MAPOTHER, M.D., F.R.C.S.I.

ON Jan. 13th, 1891, a professional man from India, aged forty-nine, and intemperate, consulted me for a chancre which had appeared a week before. About twenty-seven years ago he had chancroids and suppurating buboes, which healed very slowly. The sore was on the dorsum, one-third of an inch behind the corona, and there were hard enlarged glands in each groin. Small doses of blue pill, small inunctions in the groins, and dry lint were ordered. Good progress was made for a fortnight, but then the sore began to extend slowly, and there arose round it, except towards the corona, a thick ridge. This near the frænum was œdematous, but above there was a semi-solid deposit in the areolar tissue of the preputial folds. Many local applications were tried without effect, and iodoform seemed only of little service. On March 9th iodide of potassium was prescribed together with the mercurial treatment. After ten days the skin over the hardest part of the ridge gave way, and matter similar to that in gummata came out. Improvement followed, but so slowly that it was April 13th before cicatrisation was complete. It ulcerated again superficially on the 20th, but finally healed in three weeks. The enlargement of the glands has become absorbed, and no secondaries appeared. The peculiar deposit and the extreme slowness of healing, due probably to the age, habits, and former residence of the patient, seem to render the case worth recording. A somewhat similar form was described by Fournier.[1]

Cavendish-square, W.

A CASE OF CEREBELLAR TUMOUR.

By THOMAS DOBSON POOLE, M.B. EDIN.

THE following case, the notes of which I took on March 30th, may have some physiological interest:—

M. R——, aged four years, was admitted into the Lancaster Infirmary three months ago, the complaint being headache, vomiting, and loss of use of the lower limbs. Her father is healthy, and her mother, who possesses a blue and a grey iris, suffers from occasional convulsive attacks, especially during pregnancy and childbirth. Three of the children died of "fits," and there are three healthy. About nineteen months ago the patient fell into the canal, the cause of this accident being supposed to be due to a "fit." Nine months ago she had two "fits," which were accompanied with bleeding from the mouth, and at this time it was noticed she began to lose the power of walking, which gradually got worse. The temperature is normal. She is well nourished and muscular, and has a peculiar heavy, sheepish, and expressionless aspect. As regards the alimentary system, it may be noted that the upper incisor teeth are small and placed apart, the canines of the same row appearing as small triangular bodies projecting through the gums. The lower row of front teeth are small, crowded together, and free from notches. Nervous system: The sensations are much impaired. No discomfort is experienced when a hot test-tube is placed in contact with the skin of the legs and arms, and she bears it well on the cheek. Running a pin a moderate depth into the skin of the upper and lower limbs, or the tip of the nose or forehead, is performed without the patient's wincing, or giving other evidence of pain or sensation. But when the pin is thrust into the skin in the same situation so as to cause bleeding, the patient says she feels it, and makes a tolerable good attempt to localise the seat of pain. Pinching the muscles of the calves of the legs causes pain. The pupils are natural and react to light. The senses of taste and smell are affected, she drinks vinegar like a hypnotised person, and the vapour of ammonia when applied to the nostrils is borne well. Touching the conjunctiva causes reflex closure of the eyelids, but apparently with little discomfort. The knee-jerk, if anything, is slightly pronounced. She sits up in bed with the body bent forwards and the knees flexed, but if pushed to one side she falls backwards and to the right or left, and she can just manage, by taking hold of both sides of her cot, especially when requested in a commanding tone of voice, to stand up in bed, though she does this in a very oscillating manner. Closing the eyes affects neither sitting nor standing. She can turn over the leaves of a book and touch the tip of her nose without special effort. With the exception of coldness of the lower limbs there are now no vaso-motor or trophic changes to be detected. Sleep is often prolonged and deep, and her intelligence is good. She stands (with assistance) with the legs separated, feet everted, knee-joints extended, and the spine bent forwards. When assisted to walk, the lower limbs, being abducted and rotated outwards, are thrown forwards and outwards without flexion of the knees, and the plantar aspects of the feet, rather than the heels, come down to the ground with a thud. If any comment on her progress while in the infirmary is needed it is that the attacks of headache diminished in frequency and severity, and the vomiting ceased, while the general anæsthesia and loss of power of the lower limbs gradually increased until the time of her death (April 30th), two hours before which she was unconscious, but previously to the onset of unconsciousness there was nothing whatever to excite suspicion of the sudden termination of the illness. At the post-mortem examination the lateral ventricles were found distended with fluid. Projecting from the under-surface of the cerebellum, and pressing on the medulla oblongata, was a rounded, smooth-surfaced, and hardish (in comparison with the brain substance) tumour about the size of a walnut. Unfortunately I was unable to examine the tumour microscopically, as it had been hopelessly disintegrated by a fluid into which it had been erroneously placed with the intention of hardening.

Poulton-le-Fylde.

[1] Archives Générales de Médecine, Nov. 1867.

CASE OF CHLOROFORM SYNCOPE.

By EDWARD RICE, M.D. LOND.

THE following case may prove of interest during the present discussion as to the existence or non-existence of cardiac syncope during the administration of chloroform.

On Aug. 31st I was asked by Mr. Sankey to give chloroform to a lady about forty years of age for removal of a growth on her tongue. She was a highly nervous but otherwise healthy woman, who had taken an anæsthetic (probably the A.C.E. mixture) without any untoward symptoms on two previous occasions. At 7.30 A.M. on the morning of operation she had some breakfast, the solid portion of which consisted of two meat lozenges and some thin bread and butter. At 11.30 A.M. I proceeded to give her chloroform, using Junker's inhaler with foot bellows attachment, and a new bottle of Duncan and Flockhart's chloroform. All went well for about seven minutes, except that she was at first very excited and talkative, anæsthesia being nearly complete when Mr. Sankey remarked she looked rather pale. My finger on the temporal artery detected nothing

wrong. Mr. Sankey, however, on feeling her right radial found it extremely feeble, and Dr. Stark, who was also present, failed to detect any pulsation in the left. Her pupils were both contracted, her respiration normal, and it was not till Dr. Stark remarked on the absence of pulsation in the left radial that I noticed any change; but at that instant I lost pulsation in the temporal, her pupils suddenly dilated widely, and then, but not till then, the respiration failed, becoming shallow and irregular. Her head was at once lowered, Mr. Sankey commenced artificial respiration, and a capsule containing three minims of nitrite of amyl was at once applied to her nostrils. After a minute or two some colour returned to her face, and she made some attempts to breathe. A brandy enema was administered and friction applied over the cardiac area, and gradually the pupils contracted, and the pulse become re-established. Directly after this she began to retch, and brought up a little fluid, and shortly regained consciousness. The operation was of course abandoned; just three drachms of chloroform were used, and it is worthy of remark that on auscultation, as she regained consciousness, the cardiac sounds, while plainly audible at the apex and over the pulmonary valve, were all but inaudible over the aortic valve; they, however, quickly returned, and in a few minutes the patient was quite conscious, and complained of nausea. We learnt afterwards that she had taken sulphonal without permission the night before, and Mr. Sankey noticed that for some days afterwards her pulse remained very compressible.

I have recorded this case at length because it seems to show the great value of having nitrite of amyl always at hand, and also, most clearly, that the danger signal was undoubtedly first declared in the pulse, the respiration failing last, and I cannot but enter an earnest protest against the advice lately given that observation of the pulse is unnecessary. In conclusion, I have only to express my grateful thanks to Mr. Sankey and Dr. Stark, to whose prompt and ready help I in great measure owe the fact that I have not to add to the already formidable list of deaths under an anæsthetic.

Oxford.

CONGENITAL HEPATISATION OF THE LUNGS.

By W. F. GRANT, M.D.

THE following case may possibly be of sufficient interest to merit insertion in THE LANCET.

A poor woman in my neighbourhood was rather suddenly delivered of a child, and was attended to by a friend who tied and cut the cord pending the arrival of the midwife. The latter washed and dressed the infant about an hour after its birth. It died ten hours later, and was seen by me within two or three hours of its death. The friends asserted that the midwife had bandaged the child too tightly, and they ascribed its death to this cause. The child was an apparently healthy and well-nourished boy. There was some lividity of the lips, but no other appearances suggesting asphyxia or convulsions. There were no bruises or signs of injury. It was impossible that the child could have been overlaid, as death took place in the afternoon, and the mother was about to give it a teaspoonful of gruel when she noticed it breathing its last.

A post-mortem examination was allowed. I found marked venous congestion of the cerebral membranes, the longitudinal sinus especially being full of dark fluid blood. On opening the cavity of the chest the thymus was seen to be of a light red colour, and well developed; the heart was fully exposed to view, the lungs were of a dark red, and lying well back in the cavity of the thorax. The auricles were full of dark fluid blood; the ventricles were contracted and empty, the surface vessels being distended. Both lungs floated in water, the left just below the surface, and the right at a lower level. On examining the lobes separately it was found that the two lower lobes of the right lung were hepatised and sank in water, as also a section from the lower lobe of the left lung. The other organs were apparently in a healthy condition. It was clear that tight bandaging could not have had anything to do with the child's death. Theoretically, I suppose, such a cause is possible, but I have been unable to find any record of such a case.

Mile-end-road, E

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

THE PADDINGTON INFIRMARY.

A CASE OF PACHYMENINGITIS HÆMORRHAGICA AND ONE OF SPONTANEOUS RUPTURE OF A PANCREATIC CYST.

(Under the care of Dr. THOMAS SAVILL.)

IT is well to bear in mind the occasional occurrence of subdural hæmorrhage without the history of any injury, for otherwise wrong conclusions may be drawn in cases where the presence of such hæmorrhage may possess great importance from a medico-legal aspect. Dr. Savill considers the hæmorrhage in this case as probably due to fatty disease of the vessels. Another cause is suggested by Mittenzweig,[1] who draws attention to the frequency with which subdural hæmorrhages arise from veins running an abnormal course from the longitudinal sinus. The fact that these veins are often abnormal was previously shown by Huguenin. We are indebted for the account of Case 1 to notes taken by Miss A. Benson, M.B., B.Sc. Lond., clinical assistant.

CASE 1. *Pachymeningitis hæmorrhagica; necropsy; remarks.*—A. P——, a married woman aged thirty-six, was admitted to the Paddington Workhouse along with her six healthy children on July 14th, 1891, in apparently a perfect state of health. The next day she complained of so severe a headache that she was unable to go over to the able-bodied side, where she had been allocated. There was no other symptom except constipation. On the following day (July 16th) the headache became so severe that she was transferred to the infirmary; and it was now accompanied by extreme drowsiness. It was also noted that she had partial ptosis of the left upper eyelid; pupils equal, with reaction to light; she spoke in a low tone, as if it were too much trouble. At night she kept getting out of bed, and wandered in her mind. These symptoms, the drowsiness and headache during the day and the delirium at night, continued during the ten days' illness till her death on July 26th. The heart, lungs, and abdominal viscera were normal all the time, but the following symptoms were noted.

July 16th.—Both patellar reflexes present; no ankle clonus. Walked out of the ward into linenry last night, and this morning as far as the top of the stairs. Says she does not know why she gets out of bed. Urine, sp. gr. 1026; acid; loaded with urates; very faint trace of albumen.

18th.—Crawls under the bed and wanders about her child. Has a delusion that the beef-tea is poisoned.

19th.—Semi-cataleptic condition. Mind fairly clear, but answers very slowly. Pain in epigastric region; tongue furred; no vomiting. Still in a condition of stupor; sighs heavily at times. Still complains of headache. Cranial nerves: Smell is apparently normal. She sees and describes a picture on the opposite wall; discs normal; veins of fundi slightly engorged. No strabismus or impairment of movements of eyeballs; pupils are equal, and react equally. Considerable ptosis of left eyelid. No anæsthesia of face; mastication normal. Paresis of whole of left side of the face; left eye can just be closed, but not firmly; mouth drawn over to the right when an attempt is made to whistle. Taste and functions of other cranial nerves seem normal.

20th.—Face flushed and perspiring; left elbow somewhat stiff, right flaccid; grasp of left hand considerably weaker than right; no difference in legs; stupor deepening, but can still be roused. Last night temperature 100°; to-night 102°; goes down each morning. Hitherto the temperature has been normal; bowels act naturally; pulse rapid and dicrotic; urine drawn off; analysis gives the same result as before.

21st.—Patient is menstruating; left hemiplegia more evident; arm weaker than leg; no important change; result of examination of general sensation negative. Cheyne-Stokes respiration this evening.

[1] Neurologisches Centralblatt, April, 1889. Sajous, vol. ii. 1890, p. 16.

22nd.—Erythematous blush and œdema of left forearm. Recognised her child this morning.

24th.—Coma deepening; pulse very feeble; perspiration profuse; complete flaccid paralysis of left arm.

25th.—Left eye slightly inflamed. The coma became deeper, and she died in the early morning of the 26th. During the last three days of life the morning temperature was 99° and the evening about 100°. She had no convulsions at any time, never complained of giddiness, and only once vomited. The treatment consisted of iodide and bromide of potassium.

There was nothing of much importance in the previous history, except that she had been addicted to beer drinking (six or eight pints a day). She had had two miscarriages, a sore-throat, and her hair used to come out two or three years ago.

The necropsy revealed fatty degeneration of the heart, liver, and kidneys. The skull-cap was thickened, measuring a little more than three-eighths of an inch in the frontal region; no fracture. Tibiæ rickety. Brain: weight 37½ oz.; about three ounces of blood-stained serum in the arachnoid. On opening the dura mater an extensive hæmorrhage was seen occupying the under surface of the dura on the left side, orange coloured on the surface, purple in its interior, extending from the tip of the frontal lobe over the vertex to under surface of occipital lobe, and laterally from the falx cerebri downwards to the foramen magnum. It was half an inch thick in its thickest part, opposite the middle of the ascending parietal convolution, and faded off to nothing at the margins. It was firmly adherent everywhere to the under surface of the dura, seeming as though it had taken place between the parietal arachnoid and the dura mater. It was not adherent to the cerebral cortex, excepting at one small point corresponding to the middle of the parietal convolution (where the hæmorrhage was thickest). Here there was a minute connexion, easily overlooked, giving the decided impression that a band of adhesion had formerly existed, from which the hæmorrhage might have taken place. The frontal lobes of the opposite sides were adherent in the middle line. The vertex of both sides was injected, especially that on the left, but there were no hæmorrhages beneath the visceral arachnoid. Convolutions on the left side somewhat flattened. Ventricles and cerebral substance were natural. Vessels at the base looked healthy to the naked eye. Specimens of the cerebral vessels were set aside to be examined for fat.

Remarks by Dr. SAVILL.—These cases of meningeal hæmorrhage are sufficiently rare to warrant publication. Some five or six cases have occurred in the infirmary in the course of five years, but the patients have all been older people, and death did not occur at such an early stage. Moreover, in all of them there was a more or less definite history of head injury; here there was none. It was interesting to be able to follow the case from the very beginning and throughout its somewhat brief course (twelve days). The salient features of the case were a history of alcohol and probably syphilis, gradual advent of an illness in which headache, drowsiness deepening into coma, delirium at night, partial paralysis of the body and some of the cranial nerves *on the same side as the lesion*. This was probably accounted for by the fact that the hæmorrhage extended right down to the foramen magnum. There was well-marked fatty degeneration of the organs, and it is very likely that the subsequent examination of the cerebral vessels will show that they also have undergone a similar fatty change, such as that described by Sir James Paget many years ago.[2] Alcohol and syphilis are very likely predisposing causes of the condition. There must have been, and indeed there were evidences of, considerable cortical irritation on both hemispheres; hence the absence of convulsions, vertigo, and vomiting (except once) teach us once more that it is not possible to lay down hard-and-fast rules in medicine. The source of the meningeal hæmorrhage is always obscure. The cataleptic condition was doubtless connected with the advent of menstruation. Hysterical symptoms are not unfrequently superadded to those due to gross organic lesions under these circumstances. Space forbids my dwelling on the transient erythema and œdema of the left forearm and other interesting features.

CASE 2, one in which a patient dying with symptoms of acute peritonitis was found to have a cyst in the region of the pancreas, which had given way, is worthy of special attention. The contents of the cyst differ from those described in cases in which operation has been performed. With regard to this, Mr. Treves[3] states that the fluid is usually turbid, brownish, odourless, and of rather high specific gravity. It is alkaline or neutral, contains albumen, but neither bile nor urea.

Pancreatic cyst; retro-peritoneal rupture; peritonitis; death.—S. P——, a 'bus conductor, aged thirty-two, was admitted into the infirmary on Oct. 22nd, 1888. The family history was good. Ten months before admission he was said to have had an "abscess" behind the ear; he was only ill for one week, and with that exception he had passed a healthy, temperate existence, and *kept at work until two days before admission*. He did not go to work on that day on account of pain in the abdomen and a feeling of sickness. The next day he felt rather worse, but there was no actual vomiting. The bowels were confined. The following day, Oct. 22nd, he was admitted, and when seen shortly afterwards was found to have all the signs of acute peritonitis. The legs were drawn up, respiration thoracic, severe pain in the epigastrium shooting round the abdomen, constant, but liable to exacerbation. The abdomen was very tender, therefore difficult to examine, and rather tympanitic. The area of liver dulness appeared to be uniformly enlarged, and gave the impression that the liver was pushed forwards, as, indeed, the issue showed it to have been, and it was continuous below with an abnormal area of dulness down the right side of the abdomen. The most acute tenderness was in the right flank. The heart and lungs appeared normal, the pulse thready and dicrotic. Urine scanty, sp. gr. 1027, acid; large trace of albumen; large quantity of lithates and a trace of bile pigment. The next day he vomited several times, the bowels were confined, and there was a slight icteric tinge. Opium was prescribed internally and turpentine stupes to the abdomen. On the 24th the jaundice was becoming more marked, and it was noted that he was "vomiting bilious-looking matter, and becoming more collapsed." On the 25th Mr. Treves kindly saw him in consultation. The peritonitis seemed from the history to be probably due to perforation or rupture, and an exploratory operation was decided on. Nothing, however, was found, and the abdominal incision had to be sewn up again. He never rallied from the operation, and died the same evening. The temperature during the three days he was in the infirmary was taken every four hours, and ranged between 101·4° and 98°; it averaged about 99°.

Necropsy.—On opening the abdomen there were signs of peritonitis it is true, but they were not very marked, doubtless on account of the short history. The intestines presented numerous patches of subserous hæmorrhage. On removing the intestines an infiltration was found of yellowish, greasy, caseous, putty-like material in the subperitoneal tissue at the back of the abdominal cavity. It seemed to have started from, or, at any rate, was far more abundant around, the pancreas. This organ was itself infiltrated and enlarged, measuring 6½ in. in length by 1½ in. transversely in the middle. The putty-like infiltration also involved the glands at the back of the abdomen, and extended from the pancreas downwards and outwards on both sides, behind both kidneys. It was thicker and extended further down the right side than the left; it only extended a little way upwards, a little way into the mesentery and meso-colon, and a little way down the front of the aorta. The infiltrated material was of yellowish-white colour, opaque, perfectly structureless, both to the naked eye and under the microscope, and consisted almost entirely of fat globules and débris. Its exact point of origin could not be discovered, but it was most plentiful in one part of the pancreas just to the left of the head. The amount of the whole material would be about five or six ounces roughly. The heart and lungs were normal. The liver weighed sixty-five ounces and was of a yellowish colour on section, but appeared quite normal. In the pelvis of the right kidney was a largish uric-acid calculus, but the kidney substance, the other organs, and the serous cavities were natural.

Remarks by Dr. SAVILL.—Seeing some cases of pancreatic cyst recorded in THE LANCET "Mirror," it occurred to me that this one might be of interest. Had the case been seen at an earlier stage, when a more thorough examination and, consequently, diagnosis were possible, the termination might have been more favourable; but the symptoms throughout were somewhat obscure. The jaundice was

[2] Fatty Degeneration of the Small Bloodvessels of the Brain and its Relation to Apoplexy. London Medical Gazette, 1850.

[3] THE LANCET, vol. ii. 1890, p. 655.

due, as we afterwards found, to pressure of the material on the bile-duct. Death took place by collapse, and was undoubtedly expedited by the pressure of the extravasation on the abdominal sympathetic ganglia. The case has been described as rupture of a pancreatic cyst, and this it most probably was; but it has sometimes occurred to me whether it might not have been rupture of the chyle-duct, for the material might possibly have been chyle, with the fluid part absorbed; but the extensive involvement of the pancreas is against this view.[4]

STANLEY HOSPITAL, LIVERPOOL.

A CASE OF GASTRO-ENTEROSTOMY FOR RELIEF OF PYLORIC OBSTRUCTION, FOLLOWED LATER BY RECURRENCE OF SYMPTOMS FOR WHICH JEJUNOSTOMY WAS PERFORMED.

(Under the care of Mr. F. CHARLES LARKIN.)

IN THE LANCET of July 11th of this year was published the notes of a case of gastro-enterostomy operated on by Mr. Larkin on May 22nd, and we now give an account of the progress of the case since. The patient, a woman aged forty-seven, had suffered from vomiting since July of the previous year, and before admission to the hospital it had followed on taking anything. She had much emaciated, and there had been an abdominal tumour with considerable pain since the previous November. It was found at the operation that the growth occupied nearly the whole of the stomach, and that the part of the viscus not involved was towards the cardiac end and high up. The diagrams illustrate the way in which the difficulty in approximating the stomach and intestine was overcome.

The patient left the hospital on June 19th, much improved in health and fatter. The pain and vomiting had almost entirely gone At home she partook of the ordinary diet, but felt best on eggs, milk, and bread-and-butter and tea. After taking meat and vegetables heartily she felt uncomfortable, and was sometimes sick. On June 28th she went to the Woolton Convalescent Institution for a fortnight. During the latter few days of her stay there she was very often sick. She attributed this to the diet of the institution, which was more solid than that of her home. After her return from Woolton she kept fairly well, but always vomited after taking much meat or vegetables. By the middle of July the vomiting was frequent after solids, so she was ordered to take only milk, eggs, bread-and-butter, beef-tea, &c. She did well on this; but towards the end of July began to vomit even after these, and soon after everything she took, and was accordingly readmitted on July 31st.

On readmission she was noted to be "emaciated, but not so much as on her first admission. Has no pain, but vomits after everything she takes. The amount vomited is never large, and seems always to be less than the amount ingested. The bowels have only acted about once a week lately, and then the motion is small. Feels weak and weary with vomiting. The tumour in the epigastric region is very obvious both to inspection and palpation, and larger than it was when she was discharged. The superficial epigastric veins are considerably enlarged and distended, but there is no swelling of the legs."

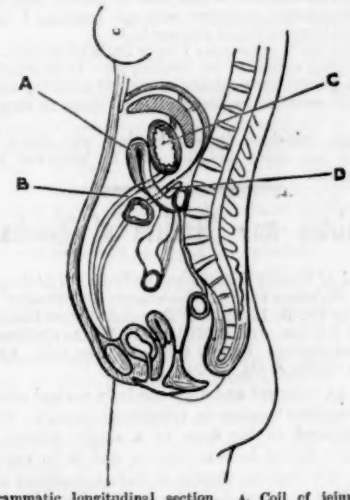
Aug. 4th.—For the last five days since admission she has been carefully dieted on soda-and-milk, peptonised milk, beef peptonoids, &c., but the vomiting is just the same. She is obviously losing ground, getting thinner, and looks worn out. The bowels have acted once since admission. Mr. Larkin decided, after consultation with his colleagues, to feed her by the jejunum, and accordingly performed jejunostomy. Under chloroform an incision about two inches long was made half an inch internal to the left linea semilunaris, and with its centre a little above the level of the umbilicus. The various structures were divided, the fibres of the rectus separated, and the peritoneal cavity opened in the usual way. On exploring with the fingers the hard and nodular stomach could easily be felt, and many nodules could be seen and felt in the peritoneum. The omentum was raised up and to the right, and beneath it all seemed healthy, no secondary nodules being anywhere seen. The intestines were collapsed. A piece of what was thought to be the upper part of the jejunum was selected and brought without tension into the parietal wound and fixed there with green gut sutures and a single bone plate and a harelip pin, precisely in the way described by Mr. Jessett in the *British Medical Journal* for June 27th last. The rest of the wound was closed. The operation did not take long, and the patient was not at all collapsed when sent back to bed. For the next three days, to avoid the vomiting movements, all food was withheld from the stomach, but she was regularly fed by nutrient enemata of peptonised milk, beef peptonoids, egg and brandy. They were well retained. On Aug. 7th, three days later, the jejunum was opened (without anæsthesia) by simply cutting down on the harelip pin. A Holt's winged catheter (No. 10) was introduced, and nicely fitted the aperture. Four or five ounces of milk were passed through the catheter, and the end was then corked and fastened to the chest wall by a piece of strapping. The wound was then dressed. Henceforth she was fed through the catheter with a liquid diet, consisting of three pints of milk, two eggs, and a pint of beef-tea daily. The nutrient enemata were stopped a few days later. The bone plate became eroded and fell off on the fourteenth day.

Sept. 6th.—Patient much improved; gets up and sits about the ward. Wound completely healed, but the skin around is apt now and again to become eczematous from the moisture that oozes from the jejunal opening. The catheter is fairly tightly grasped, and very little intestinal contents escape. States she is comfortable, but often feels hungry and wants a good drink of tea, but it makes her sick if she takes it.

Sept. 13th.—Left the hospital to-day. Condition much the same as on the 6th.

Remarks by Mr. LARKIN.—In this case it is quite clear that the gastro-enterostomy was only of temporary value, the obstructive symptoms recurring in about eight weeks, and becoming nearly complete in ten or eleven. There can be no doubt that the recurrence of symptoms was due to closure of the preternatural orifice. This closure might have occurred from one of two causes: (1) Extension of the malignant growth around and over the orifice. (2) Closure by cicatricial contraction. In favour of the first view is the fact that from the smallness of the uninvolved portion of the viscus the stomach opening was quite close to the edge of the tumour. But even allowing this the recurrence seems too rapid, and Mr. Kilner Clarke informs me that in a case of his the opening did actually become involved in the growth and yet obstructive symptoms did not recur. I am in fact inclined to think that the aperture closed spontaneously, as was proved post mortem to have occurred in Mr. Stansfield's case. It is noteworthy that both in Mr. Stansfield's and in my case the symptoms of closure

FIG. 1.

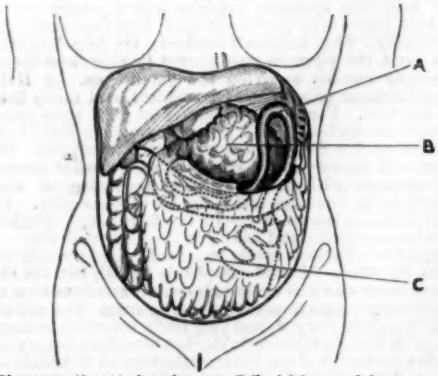


Diagrammatic longitudinal section. A, Coil of jejunum. B, Anterior two layers of great omentum. C, Stomach. D, Transverse mesocolon.

[4] I believe Hoppe-Seyler refers to rupture of the chyle-duct in the Philosophical Transactions, 1842, p. 81, and I think cases were recorded by Sir Astley Cooper.

commenced about eight weeks after the operation. It is difficult to see what we can do to avoid this closure. Mr. Jessett tells us it will not occur if we make the hole large enough and pass the sutures close to the edge. I made apertures over an inch long and passed the sutures as near to the edge as I dared. Moreover, Mr. Kilner Clarke, in whose case the communication never closed, cautions us

FIG. 2.



Diagrammatic anterior view. A, Coil of jejunum, lying on uninvolved part of stomach. B, Malignant tumour of stomach. C, Great omentum. The dotted lines indicate the position of the transverse colon, duodenum, and part of the jejunum.

not to make the incisions too long (not over an inch), and Mr. Stansfield's incisions closed, though he made them very long.

As the method I adopted of bringing the jejunum to the stomach through the mesocolon and omentum was very convenient, and seemed in this case to be the only way of bringing the viscera together without tension, I append two sketches illustrative of the method.

As regards the jejunostomy I have little to remark. The method adopted seems to me admirable. It is simple and rapid and a great improvement on the old suturing method. The catheter used works very well, and there is very little leakage.

I am again indebted to Mr. Fardon, our senior house surgeon, for the notes and the care he bestowed on the after-treatment.

Reviews and Notices of Books.

A Text-book of Human Physiology, including Histology, with Special Reference to the Requirements of Practical Medicine. By Dr. R. LANDOIS. Translated from the seventh German Edition, with Additions, by WILLIAM STIRLING. 845 Illustrations. Fourth Edition. Two vols. London: Charles Griffin & Co. 1891.

THIS is an enlarged and very carefully revised edition of the most complete treatise on physiology extant. The last edition appeared in the form of a single volume. The present one is issued in two volumes, and is in every way improved. Dr. Stirling appears to have introduced all that has been done in physiology during the last three years, whilst some of the sections have been almost rewritten, such, for example, as those relating to trypsin, glycogeny, muscle, and nerve. The merits of the work are incontestable, for it is a perfect encyclopædia of physiological knowledge. The only objection that can be urged against it is that it is too large and contains too many facts for the student, at least in the first year of his study, to grasp. It not only supplies in a condensed form all the principal facts that have been ascertained in physiological chemistry, but it gives an excellent *résumé* of the histology of each tissue and organ, those of the liver, kidney, lung, and brain being exceedingly well drawn up. It presents to the student a full account of the numerous and complicated instruments that are employed in the prosecution of physiological research, and supplements and materially facilitates the comprehension of these accounts by carefully drawn engravings. The purely physiological part is written in a very intelligible style, and we must compliment Dr. Stirling on the accurate and lucid translation he has given us of the original German. Perhaps the best feature of it is, however, the frequency with which references are made to practical points in medicine and surgery. Thus, for example, under the head of Respiration, the subjects of asthma, pneumothorax, Cheyne-Stokes breathing, pathological percussion and respiratory sounds, pulmonary œdema, dyspnœa, and asphyxia are all explained at greater or less length. Good sections are also devoted to ventilation, to accidental impurities, and to the characters and varieties of sputum. Many of these points are either altogether omitted or are only just mentioned in the ordinary text-books. In addition to all this, frequent reference is made to a subject almost entirely neglected in English works—viz., comparative physiology, and even the historical development of each important division of physiology is shortly given. The number of illustrations has been nearly doubled, and many of them are coloured. The work may be recommended as an authoritative exposition of the present state of physiological knowledge.

Dell' Uso delle Acque di Montecatini nella Litiasi Biliare. Per il Cavaliere DOTT. CARLO FEDELI. Piacenza, 1891.
Montecatini e le Sue Acque. Per il Cavaliere DOTT. PAOLO CASCIANI. Florence: 1891.
L'Acqua Leopoldina di Montecatini. Per lo stesso Autore. Florence: 1891.

MONTECATINI has a literature of its own, as abundant as the waters whose praises it sets forth. The three above-cited *opuscoli* are the latest additions to it—the latest, and to this extent the most valuable—as giving the results of the most scientific appreciation of the waters, checked by clinical observation and professional criticism.

The "Italian Carlsbad," as it is called throughout Italy, has always been the most frequented spa of the peninsula, from the days of Cæsalpinus and Fallopius down to our own. Within its area, in the beautiful Val di Nievole, it numbers over twenty distinct sources, the predominant element in which is chloride of sodium. Each source, however, has differentiating characteristics as to composition and temperature, containing, besides the chloride of sodium, chlorate of magnesia, sulphates of potash and soda, and sulphates of lime and magnesia. In addition the waters yield, in varying proportions, the salts of iron and manganese, of iodine and bromine, while, at the moment of their gurgitation to the surface, they give off, in the gaseous form, nitrogen, oxygen, and carbonic acid.

These sources are partly private property, partly the property of the State. The latter (those under Government) are eight in number; five of them—the Tettuccio, the Rinfresco, the Regina, the Olivo, and the Savi—are utilised for internal use; and the remaining three—the Terme Leopoldine, the Cipollo, and the Bagno Regio—for bathing. The Rinfresco, however, and more recently the Leopoldina, are also of acknowledged value as beverages.

It is manifest that each of these eight sources (which have a fundamental principle in common, but vary very markedly in accessory qualities) has its special group of cases, for which it is more particularly adapted, insomuch that any oversight in diagnosis might send the patient past the source surely indicated for him to another whose action would be negative, possibly injurious.

It is in one important class of cases at least that Dr. Fedeli seeks to minimise the risk of such oversights by a clear and succinctly defined enumeration of the symptoms which in their *ensemble* point to one or other source for their remedy. Biliary lithiasis, a malady as protean in its development as it is common in its incidence, is such which he selects for treatment by the Montecatini waters. From the anatomical

point of view he distinguishes three forms of it: (1) Cystocolelithiasis; (2) angiocolelithiasis; and (3) biliary gravel (*sabbia biliare*); and these again he subdivides into easily recognisable clinical forms, traceable to their several causes, alimentary in the first instance, habitudinary in the second, with minor causes which contribute to the pathognomonic characteristic—slowing of the biliary secretion.

We cannot follow Dr. Fedeli into further detail, particularly as to the special source or sources he indicates for special forms of the malady. We are only concerned here to point out that while, in cases of biliary lithiasis, an indiscriminate use of the Montecatini waters invariably issues in disappointment or worse, their judicious employment, based on accurate and vigilantly checked diagnosis, is as invariably beneficial—very often, indeed, signally successful. The alternation of one water with another, according to the impression made on the biliary secretion, is a practice which clinical experience has reduced to something like rational system, and the *catena* of cases by which Dr. Fedeli illustrates it is an interesting contribution to hydrological therapeutics. Indications as to the duration of the treatment, the use of the mineral bath as an auxiliary, the diet to be observed, and the exercise to be taken, are all, in their degree, instructive features in his exposition, and enhance its worth for the practitioner who appreciates the often embarrassing complexity of the disease under consideration.

Dr. Casciani's treatise is a pleasantly written account of the Montecatini waters, addressed almost as directly *ad populum* as *ad clerum*. Like Dr. Fedeli, he holds an official appointment under Government at Montecatini, and writes with a sense of responsibility inseparable from his office. His second treatise, that on the Acqua Leopoldina, is a justification of the first, showing as it does that a more scientific appreciation of that source has led to its enhanced position in professional favour. A prejudice, due to its misuse, had for some time reduced it to a merely balneary importance, but its value as a purgative when employed in the appropriate class of cases has, thanks to Dr. Federici, the Government director of Montecatini, and to Dr. Casciani himself, again brought it to the front. In habitual constipation, in abdominal plethora, in biliary calculi, in "icteric catarrh" (*icteritia catarrhalis*), in cerebral and pulmonary congestion, and in sanguineous plethora generally, there is accumulated evidence of its virtues when judiciously prescribed. The lesson taught by the treatises under review is, indeed, the familiar one, though never unwelcome or ill-timed, that the value of a remedy bears a direct proportion to the judgment of the practitioner. The medicine is necessary, but still more so is the physician—just as the lighthouse owes its saving power to the light.

La Suisse; Balnéaire et Climatérique. Par le Dr. EUGÈNE de la HARPE. Zurich: César Schmidt, Éditeur.

DR. DE LA HARPE'S book contains an exhaustive account of the Swiss health resorts, and is written in an interesting and entertaining manner, though at the same time it contains a very large amount of scientific matter. The author brings before the public several hitherto little known health resorts, two of which may be briefly alluded to here. The first is a small sanatorium, named Arosa, in the neighbourhood of Coire. There is a good road passing through Maladers, Castiel, and St. Peter to Langwies. From the latter place there is a newly opened carriage road and a mule path to Arosa, which is at an altitude above that of the Engadine, and is a collection of châlets and hotels situated in a vast elliptical hollow. Tall, bare peaks surround it, but towards the south there are meadows and pine woods. This station has been frequented by the public only for a short time in the summer, and has scarcely as yet taken its place as a winter resort. Though there are occasionally rapid variations of temperature, the air in summer is very bracing, free from dust, and dry. The absence of level roads is at present a drawback for invalids; but as the place becomes better known this objection will no doubt be obviated. Arosa is specially recommended for patients in the first stage of phthisis, but it is not so suitable to nervous and excitable subjects. The second place is Weissenbourg, a village three hours from Thun, which is celebrated for its baths, the waters being strongly diuretic. The air is pure and free from dust, and is said to contain a large amount of peroxide of hydrogen. Weissenbourg patients are placed under a strict *régime* with regard to diet, alcohol, and exercise, and there is little doubt that many find it highly beneficial. Weissenbourg is specially recommended for bronchitis, pleurisy, and lung affections; also for a catarrhal condition of the mucous membrane. The account given of Davos is very full, and all the better known health resorts are described in a manner that will be of assistance to medical men in recommending patients where to go.

Traité Pratique de Chirurgie Infantile. Par EDMUND OWEN, Chirurgien de l'Hôpital des Enfants Malades de Londres, Professeur de Clinique Chirurgicale à St. Mary's Hospital. Traduit sur la deuxième édition et considérablement augmenté par le Dr. O. LAURENT, Adjoint des Hôpitaux de Bruxelles. Avec 151 figures. Paris: G. Steinheil, Libraire-Editeur. 1891.

IN seeking to fill a void in French medical literature, owing to the absence of any recent complete work on the surgical diseases of infants, Dr. Laurent, rather than write an entirely new work, has translated Mr. Edmund Owen's treatise. We congratulate Mr. Owen on the compliment thus paid to him. But, in place of presenting his readers with a simple translation of Mr. Owen's book, Dr. Laurent has made free use of other English, French, German, and American works on this subject; and by intercalating large extracts from other authors he has endeavoured to make his work more complete. He has also, by Mr. Owen's permission, he tells us, altered the arrangement of chapters, and even of sections of chapters. And thus the book before us differs widely from an ordinary translation. It forms a bulky volume of some 700 octavo pages. The illustrations have been added to, but we cannot congratulate Dr. Laurent on the artistic merits of these embellishments. The additions to the text, however, appear to be well done and carefully selected.

Elementary Chemistry for Beginners. By W. JEROME HARRISON, F.G.S. Blackie & Son, London, Glasgow, Edinburgh, and Dublin. 1890.

THIS little book is intended for the use of the children in those of our elementary schools where chemistry is selected as one of the subjects which, according to the code of education, may be taught. It is therefore written to meet the requirements of the code, which treats of the subject in three parts:—Part I. (the first year's course): Elementary and compound matter; illustrations of combination and decomposition in such bodies as hydrochloric acid, water, oxide of mercury, and rust of iron. Part II. (the second year's course): Preparation and properties of the common gases, such as oxygen, hydrogen, nitrogen, and chlorine; the chemical constituents of pure air and pure water, and the nature of the impurities sometimes found in both; effects of plants and animals on air. Part III. (the third year's course): The properties of carbon and its chief inorganic compounds; differences between metallic and non-metallic bodies; combination by weight and volume; the use of symbols and chemical formulæ. The story is told in the simplest of language, and written in a style which is sure to arouse the interest of juvenile readers.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 19, 1891.

A QUESTION has recently been raised in two several cases concerning the right of a medical officer of health to visit and inspect Crown property under the Infectious Diseases Notification Act of 1889. In one the medical officer of the Hampton Local Board insisted upon making an inspection at Hampton Court Palace in spite of the protest of the occupant, and in the other a summons taken out against a medical practitioner at Aldershot for having failed to notify a case of diphtheria that had occurred in his practice was dismissed by the magistrates on the ground that as the case had occurred upon premises belonging to the War Office the Act did not apply. As to the correctness of the magisterial decision there seems to be no room for doubt. The language of the Act is quite unequivocal, and absolutely excludes any building belonging to the QUEEN from the purview of the Act. It is therefore equally clear that the medical officer of the Hampton board went beyond his duty in visiting the Palace, and as immunity can be claimed for the building it is satisfactory to learn that the result of his examination was to ascertain that the sanitary arrangements were in all respects satisfactory. But there is a larger question underlying the question of what the law is—namely, the question of what it should be. The Act provides for two exemptions from its operation—that is to say, hospitals for infectious disease and Crown property. The first-named exception is obviously proper, since the existence of infectious disease in a hospital where cases of infectious disease are received is notorious. The exception of Crown property stands more in need of justification, and probably would not be maintained under a complete and thoroughgoing system of notification. It is, however, quite of a piece with the tentative and permissive character of the existing legislation which makes the Act apply in urban, rural or port sanitary districts only after its formal adoption by the local sanitary authority. It would no doubt be a strong thing to subject the military barracks up and down the country to the operation of the Act at the mere will of the local authority, and to impose upon the officers in one town the obligation of conforming to regulations and adopting a discipline which in other towns do not exist. The practical difficulty of such an arrangement is a strong—perhaps, as matters stand, a sufficient—reason for an exception, at least in favour of the War Office. But this admission only pushes the inquiry back a step further. Ought any local authority to be left free to deprive its residents of the benefits of the Act? In perpetuity, certainly not. But it will be said there must be a time of preparation. The provinces were not ready for the Act, and it could not in practice have been enforced in the provinces as it was in the metropolis from the date of passing. Even so the question is only one of a little longer or a little less time. The Act was passed in 1889. If it be yet too soon to make its application universal, it is none too soon to remind the local authorities, or at least such of them as have dense populations to deal with, that the benefit of a complete sanitary system, including the compulsory notification of disease, cannot be permanently declined. The question of the exemption of Crown property will, when the system is sufficiently widely established, come up for consideration afresh, and can only, we think, be decided in one way. It is not sufficient to urge that Crown property is, as a rule, well built, well managed, and well kept. Even that is not so free from question as we could wish. But assuming all that in favour of the departments, the great fact still remains that sanitation to be efficient must be systematic. It is impossible to do it effectively in patches. All the buildings that are served by common drains or visited by common air should be treated upon a common system. This is elementary, and there can be no sufficient reason that Crown property, or any distinct class of property whatever, which communicates by means of the bearers of contagium with contiguous dwellings, should be exempt from the inspection and criticism of those who are charged with the public duty of organising and directing the sanitation of a district.

THE idea that phthisis is contagious is a very old one. More than a hundred years ago the medical faculty of Naples came to the conclusion that in this complaint they had to deal with an infectious disease; consequently for over sixty years the most rigid laws were laid down in connexion with patients afflicted with this dread affliction; they were treated as severely as the lepers of old, driven from their homes and shunned by everyone. A heavy fine was inflicted on any medical man failing to report a case that occurred in his practice. Any room in which a case had died was thoroughly disinfected, all bedding destroyed, and the woodwork taken out and replaced by new. In spite of these stringent measures the death-rate from phthisis continues as high as ever.

With Professor KOCH'S discovery of the tubercle bacillus this theory received a fresh impetus, and numerous papers have been written advocating or decrying the treatment of phthisical patients in the same wards as other patients. The fact that a disease is caused by a micro-organism is certainly strong presumptive evidence that it is infectious. A great number of statistics have been collected to show that phthisis may be communicated from person to person living constantly together, such as husband and wife, or in crowded institutions, such as convents. Apparently affirmative results have been produced from the large nursing sisterhoods on the Continent. But much caution must be used and further investigations made before the theory of the contagiousness of phthisis can be accepted. Phthisis is most rampant where human beings are crowded together in damp and ill-ventilated dwellings. The hygienic arrangements of many of these convents leave much to be desired; they are greatly overcrowded, and thus the statistics lose much of their value.

Again, experiments by Dr. HENEAGE GIBBES and others have been made to ascertain whether tubercle bacilli are to be found in the breath of consumptive patients; but these

experiments are open to one great source of error—namely, that the colour tests for the bacilli only were employed. These tests are obviously unreliable, as, though the bacilli may not be present, their spores may be. Great force has recently been added to this argument by the experiments of CORBET, who found that animals inoculated with dust obtained from rooms in which consumptive patients had been living became tubercular, but the colour tests for the bacilli proved negative.

A good *résumé* of this subject is given in a pamphlet not long ago published by Dr. T. J. MAYS of Philadelphia. He is most decidedly opposed to the theory that phthisis is contagious. He cites the oft-quoted statistics of the Brompton Hospital, which show that during a period of thirty-six years not a single authenticated case of phthisis arose within its walls amongst its 280 physicians, residents, and nurses of which there existed a health record. Dr. MAYS further gives the statistics of the Friedrichshain Hospital in Berlin, which show that out of 989 physicians and nurses, only ten became tubercular, and three of these showed evidences of the disease before entering the hospital.

Dr. BREHMER, in his work on the etiology of phthisis, states that at Görbersdorf, where his institution is situated, during the last twenty years more than 10,000 phthisical patients resided in the hospital, who walked the streets of the town and commingled with its inhabitants, and who would, therefore, apparently crowd the air with tubercle bacilli, yet the mortality is 50 per cent. less among the Görbersdorf population than it was before the hospital was established. In dealing with the report of the Collective Investigation reports of the British Medical Association, in regard to the liability of contagion between husband and wife, or between members of the same family &c., in which 278 answers were received—778 being negative, 39 doubtful, and 261 affirmative,—Dr. MAYS remarks that the large number of affirmative answers is not to be taken as proof of the contagiousness of this disease, for the aim of the inquiry was not to ascertain the number of absolutely well demonstrated cases in which contagion was present or absent, but to collect the individual opinions of a large number of physicians as to whether they believed the disease to have been contagious in certain cases or not; and he justly asks if we are to assume that the 261 opinions are of more weight than the 778 negative ones. Dr. MAYS then quotes the figures of Dr. SCHNYDER of Switzerland, who gives a record of 844 cases of phthisis occurring among married people. In 445 of these the husband only was phthisical, and in 367 the wife only, while in thirty-two both husband and wife were affected, showing that in 812 instances there was not the least proof of contagion. Again, Dr. FLINT gives the history of 670 cases of phthisis which affected husbands and wives, and among these there were only five in which there was suspicion that the disease might have been contracted from one or the other. M. LEUDET shows that out of 112 widows and widowers whose consorts died of phthisis, only seven became phthisical.

On carefully considering the statistics given above, it is impossible to come to the conclusion from them that the case for the contagiousness of phthisis has clearly been made out; the instances in which transmissibility may be suspected can surely be accounted for as coincidences in a disease so prevalent as phthisis. We are not aware of any reported cases in which infection has been proved in any of the English hospitals for consumption, although the phthisical patients mix freely and sleep in the same wards as other patients. But, although no decided verdict can yet be given, yet in face of the important results obtained by Dr. CORBET it behoves us to lay down the most stringent regulations as regards the disposal of the sputa of phthisical patients; to burn the expectoration daily; to compel the patients to use spittoons containing some disinfectant, and to prevent them from expectorating on to the floor or into handkerchiefs. We would also urge that the walls of the wards and the beds should be frequently cleansed and free and efficient ventilation assured.

PROBABLY not a few of our readers during the last month or two have made themselves practically acquainted with the symptoms of sea-sickness, and may think it cruel that any reminder should be given to them of a subject that they are desirous of forgetting, until at least the imperious impulse to travel which seizes Englishmen in July or August is again in the ascendant. The sensations that accompany or constitute the malady are sufficiently distressing. SENECA, indeed, tells us that CICERO, having taken refuge on board ship, preferred to return to Gaëta and submit to the envoy of MARK ANTONY commissioned to slay him than undergo the misery of sea-sickness; and it is certain that a sea voyage so often recommended by the physician would be far more frequently taken were it not for the dread that most persons feel of committing themselves to the tender mercies of the winds and waves, and to the discomforts that are often inseparable from such an expedition. The symptoms were admirably described long ago by Dr. BAYLE, who notes them as commencing with a feeling of general discomfort and malaise, which gradually concentrates itself at the pit of the stomach. Slight headache and giddiness are felt, the face becomes pale, and, it might be added, a sensation of chilliness is experienced. The gastric disturbance augments, suddenly nausea and vomiting occur, followed, when the contents of the stomach, if any, have been discharged, by violent retching. Physical and moral depression make rapid progress. The sufferer, careless of his position and what is passing around him, lies immovable, with courage damped, without desire, without will, capable only of anathematising the continuous and irregular movements which he feels are the cause of his woe. Some unfortunates are so susceptible that the act of stepping on board, the smell of the steward's bar, of the oil, or of cooking, the sight of the cabin, with its close berths, bring on qualms which do not quite subside in the longest voyages; but in general, after the lapse of a few days at the outside, the system accommodates itself to the changed conditions, and if perchance the sea be smooth food begins to be desired and can be retained. An interesting pamphlet on sea-sickness has just been published by Dr. O. ROSENBACH, who gives the results of some observations and experiments he has made on himself, and these he formulates as propositions as follows:—That sea-sickness

is especially liable to occur when the ship pitches; that it is less severe when the ship rolls; whilst a combination of both movements is especially effective in producing it. All the phenomena of sea-sickness occur with greater violence and sooner in proportion to distance from the centre of the ship. Young children, sleepers, and animals are all affected. Sea-sickness is rarer in boats propelled with oars than in sailing boats. Those who have taken a moderate quantity of food, with a small quantity of some alcoholic fluid, can resist the affection better than those who are fasting. It is better to lie upon deck than to go below. Anxiety and fear, within certain limits, promote sea-sickness, and movement and moderate exertion, when the rolling of the vessel is slight, prevent its access. There appear to be two types of those liable to it—in one the head, in the other the abdomen is the part most affected. All these statements appear to be incontrovertible, but if we inquire into the immediate cause of sea-sickness, it is not easy to give a satisfactory answer. Several theories have been advanced. One is that the whole series of phenomena results from the action on the mind of the unusual or unpleasant sensations of instability; another is that the rolling and pitching movements of the vessel disturb the circulation in the head and abdomen. Dr. ROSENBACH considers that molecular disturbances are answerable for the effects observed. The sudden concussions, stoppages, and reversals of position that occur in consequence of the pitching and rolling of the ship are necessarily accompanied with strong intra-molecular shocks, which affect in different individuals the liver, intestine, or brain, whilst some appear to possess a special resisting power, and do not yield even under the most trying circumstances. The prevention of sea-sickness is still a desideratum. A curious notion seems to be common that the stomach should be kept as full as possible. Thus have we seen stout old men and women take with praiseworthy persistence—had the result been satisfactory—biscuits, brandy and soda, apples, a pint of porter, a red herring, and various other edibles and potables, with an entire want of success in retaining them—a course of procedure peculiarly trying to those who happen to be standing or rather lying on the verge of the act of vomiting. Were we to counsel those who are liable to this affection, we should recommend as follows:—Take a moderate meal two hours before going on board. Remain on deck amidships, well protected against cold, as long as possible. As soon as the premonitory symptoms appear, retire to the berth, undress as quickly as possible, and lie flat on the back for the first twelve or even twenty-four hours without food. Then take a small portion of dry bread and roast beef without fluid; this the stomach will probably retain. If there is much movement of the vessel, lie quiet again, or even go upon deck, and in the course of thirty-six or forty-eight hours the system will have recovered itself, and no further trouble will be experienced. It is a mistake to introduce a quantity of fluid, even of strong coffee, into the flaccid stomach, but if sickness persist a glass of champagne will probably prove serviceable. In some few persons quinine or antipyrin, chloral or potassium bromide, may act well; but as a rule medicine of all kinds should be eschewed by those who do not wish to aggravate what is already hard to bear.

THE results of the Canadian Census taken in April last have been received in Canada with bitter disappointment, if not with actual dismay. It appears that the enumerated population of the whole Dominion at the recent Census was 4,823,344, showing an increase of rather less than half a million upon the number enumerated at the Census in 1881. The increase of the Canadian population during the ten years was only 11·52, and very slightly exceeded the rate of increase in England and Wales, where it was 11·26 per cent. The figures are certainly very remarkable. Emigration returns appear to show that the immigrants into Canada during the ten years numbered 880,000, and if we calculate that the annual birth-rate and death-rate in the ten years were respectively about 35 and 22 per 1000 of the population, the natural increase of population during the same period by excess of births over deaths would, at 13 per 1000 per annum, be more than half a million in the ten years. Thus the enumerated increase in the intercensal period would be accounted for by the excess of births over deaths, and it would follow that emigration from Canada in the ten years equalled the immigration, which we are told was 880,000. The Government of Canada may well view with dismay this very serious exodus of its population, and from their standpoint it is of little moment how much of this exodus was due to the return of emigrants to the United Kingdom or other parts of Europe, and how much to the suggested migration from Canada to the United States. It is quite possible that the number of Canadian immigrants may be deceptive, and that no inconsiderable proportion of the stated number (880,000) may have landed in Canada with the intention of settling in some of the north-western portions of the United States. So far it does not appear that any serious charges of inaccuracy have been made against the administration of the Canadian Census, and there is the strongest probability that after due allowance for a certain proportion of omissions, which would seem to be inevitable in the more thinly populated parts of the Dominion, the recent Census was relatively more accurate than the preceding one with which the comparison of numbers is made. It appears that in the Maritime Provinces, including Nova Scotia, New Brunswick, and Prince Edward Island, the population has been almost stationary during the past ten years, the rate of increase being scarcely more than 1 per cent. In the two provinces of Quebec and Ontario the rate of increase in the ten years was 9·5 and 9·7 per cent. respectively, and considerably less than the rate of increase in the mother country. In what is officially called the "western group," including Manitoba, Assinboia, Alberta, Saskatchewan, and British Columbia, the population more than doubled during the ten years, increasing from 108,165 in 1881 to 340,864 in 1891. As the entire Dominion does not appear to owe very much, if any, of its increase of population to the balance of immigration over emigration, it may be assumed that the increase in the western group is in great measure due to migration from the older and eastern portions of the Dominion. In this brief notice of the disappointing results of the recent Canadian Census it may be pointed out that the rate of in-

crease of the Canadian population was 30·5 per cent. in the ten years 1851–61, fell to 9·3 per cent. in 1861–71, and after an increase to 17·3 in 1871–81 fell again to 11·5 per cent. in the intercensal period between 1881 and 1891.

Annotations.

"Ne quid nimis."

THE CHOLERA.

AT this season it may be pretty confidently predicted that there will be accounts of the prevalence of cholera somewhere in the East, either in the shape of an epidemic or in the form of a severe local outbreak circumscribed as to the extent of its prevalence, and limited as to its duration. And we have recently had an example of each of these forms of manifestation. In connexion with the Mecca pilgrimage it was a veritable epidemic. Upwards of 11,000 persons are said to have died of the disease this summer, but at the present time cholera appears to have disappeared altogether at Jeddah and Mecca. The occurrences on board H.M.S. *Marathon* and *Redbreast* may be taken, we trust, as a localised form of outbreak. According to the report from the commander-in-chief of the station to the Lords of the Admiralty, cholera appeared on board these two ships at Bombay on September 11th. The cases were transferred to an Indian trooper, the *Tenasserim*, which has been utilised as a cholera hospital ship. The official report has been supplemented by later information received through Reuter, from which it would appear that up to Sept. 16th there have been thirty-five cases in all, and eighteen deaths in H.M.S. *Marathon* and *Redbreast*, and no fresh attack since the day preceding that date. The town and harbour are stated to be free from cholera, and no other vessels had been attacked. Occurrences of this kind are not without parallel in India. The disease will attack a body of troops on the march, attain a maximum of prevalence in a few days, and totally disappear, perhaps in the course of a week. From the published official record of fatal cases the stokers appear to have suffered most. It would be very interesting to learn whether the attacked men had been on shore, and to ascertain all the antecedent circumstances, and this will no doubt be done. Of course in so vast and difficult a subject as that of cholera it is impossible to say much within the limits of a brief article, but there are a few points to which attention may be called. India is commonly spoken of as the breeding ground of cholera, whence the cholera cause is conveyed and distributed all over the world. But it would not be at all easy to justify that assumption by an appeal to the facts. Egypt, for instance, is about midway between India and the United Kingdom; the Suez Canal forms the connecting channel; it has existed now for a number of years, and has been used for English ships and commerce out of all proportion to what it has been by other nations. But there is no history of these steamers and ships from India having been the cause of an epidemic of cholera in Egypt or in England, which is strange if the continental belief be correct—that cholera could be "jugulated" in the Suez Canal. It would be far more to the purpose if we turned our attention in the direction of the pilgrims to Mecca. Mr. Sandwith's article on "Cholera in Egypt," published in our columns, gives a succinct summary of the subject. What is wanted is an adequate provision for, and a systematic application of, sanitary arrangements to the pilgrims. Apart from all controversy as to the causes of cholera, we know that the determining cause of an outbreak may be something quite local, and that if there be an exotic cholera germ, or cholera seeds in the shape of comma bacilli, still insanitary conditions act as a muckheap for their development. As regards man himself, he may be said to be in a state of unstable equilibrium in a cholera locality and cholera season, especially if he be a new comer and not indigenous to the soil, and this appears to apply to the late unfortunate occurrences in the warships off Bombay.

THE POISON OF THE TOAD.

LOVERS of Shakespeare will be glad to see the credit of their favourite poet rehabilitated even in a small matter. The lines—

> "Toad that under the cold stone
> Days and nights hath thirty-one,
> Sweated venom,"

have of late years been looked upon as simply the expression of a popular prejudice current in Shakespeare's time, but now completely exploded. A correspondent of the *Field* remarks that "Fleming, in his well-known 'History of British Animals, maintains that the toad is destitute of any venomous quality, and is only despised, hated, and persecuted by the ignorant; and he remarks that it is surprising that prejudices so unjustifiable still continue to prevail." In two letters which appeared in THE LANCET of Aug. 29th a large amount of evidence is brought forward to show that Shakespeare's words, instead of being merely an expression of a mistaken popular idea, are really a most truthful description of fact. The toad does secrete a venom of a tolerably powerful character; and instead of this secretion taking place, as in the case of snakes, entirely through the salivary glands, it is actually secreted by the skin, so that the word "sweated" is most accurately descriptive. In his interesting letter Dr. Leonard Guthrie mentions that the secretion also occurs in the toad through the parotid glands, and that the venom is a thick milky fluid like the juice of dandelion stalks in taste and appearance. When inoculated subcutaneously it kills small birds in six minutes, and dogs and guinea-pigs in half an hour to an hour and a half; the symptoms in birds being loss of coördination followed by death, in guinea-pigs convulsions, and in the dog depression, vomiting, and intoxication. Dr. Guthrie describes two very interesting observations of his own on the effect of toad's venom. He kept a small toad in a cage with some common lizards, and one day a lizard, having bitten the toad, immediately afterwards rushed wildly round the cage, burrowing its head in the sand, became convulsed, and died in less than two minutes. His dog having seized a toad, was attacked by instantaneous and profuse salivation, violent vomiting, and collapse. He also noticed that the venom has a most powerful local action on the skin, so that after carrying a toad in his hand he got numbness and tingling in it, with slight swelling and dryness of the skin lasting for several hours. In another letter Dr. Lauder Brunton mentions that the active principle of the toad venom is probably of an alkaloidal nature. It has been called phrynin or bufidin. It appears to be a cardiac poison, acting in somewhat the same way as digitalis; but as Dr. Lauder Brunton points out, its effects appear to resemble still more those of erythrophlœum, for the uncertain gait, convulsions, and paralysis which it produces are precisely the symptoms produced by the erythrophlœum when used as an ordeal poison. Dr. Guthrie's observation of the local action of toad's venom in causing numbness and tingling is interesting, as showing that in its local anæsthetic action phrynin resembles erythrophlœum and digitalis, and confirms the truth of the generalisation made by Dr. Lauder Brunton in THE LANCET of March 3rd, 1888, that all the drugs belonging to the group of so-called cardiac poisons may have a local anæsthetic action.

FIFTY YEARS OF ENGLISH MORTALITY STATISTICS.

THE last issued quarterly return of the Registrar-General reports that the mean annual rate of mortality in England and Wales during the ten years 1881–90, calculated upon corrected estimates of the population during that period based upon the results of the recent Census, was 19·2 per 1000. It further appears that the rates in the several years showed a remarkably narrow range of variations. The lowest rates were 18·1 and 18·2 in 1888 and 1889, and the highest rate was 19·7 in 1884. Thus the annual English death-rate did not once touch 20 per 1000 during the ten years 1881–90, whereas in no single previous year on record did the rate fall so low as that figure. If we divide the fifty years 1840–1890 into five decennial periods, we find that the English death-rate remained practically stationary during the first three of these periods, in which it was respectively 22·4, 22·2, and 22·5. Under the stimulating influence of the Public Health Acts of 1872 and 1875, real sanitary progress soon began noticeably to affect the death-rate. In the ten years 1871–80 the death-rate fell to 21·4; and in the last decennial period, ending with last year, it further fell to 19·2. The rate in 1871–80 showed a decline of 4·9 per cent. from the rate in 1861–70; while the rate in 1881–90 showed a further decline of 10·3 per cent. from the rate in the preceding decennium. The decrease in the English death-rate is thus proceeding at a markedly growing rate of decline. If we note the annual rate of mortality in quinquennial periods, we find that there was a slow decline in the three periods 1861–65, 1866–70, and 1871–75, in which the rate was successively 22·6, 22·4, and 22·0. Since 1875 the rate of decline has been far more rapid: the death-rate fell successively to 20·8 in 1876–80, to 19·4 in 1881–85, and to 18·9 in 1886–90. Thus while the death-rate in the most recent quinquennium was considerably lower than in any previous period of five years on record, the rate of decline was smaller than that shown in the previous quinquennial period, a result due in some measure to the epidemic prevalence of influenza, which very unfavourably affected the mortality during 1890. Notwithstanding the recent falling off in the rate of decline, the remarkable fall in the English death-rate during the decennium recently ended implies a marked increase in the mean duration of life in England, which there is every reason to hope will be maintained. It should be remembered that this decline in the death-rate has been recorded notwithstanding the constantly increasing proportions of our urban population, which, but for the general sanitary progress in the country, would inevitably have caused an increase instead of a decrease in the death-rate.

THE DECAY OF MEMORY IN OLD AGE.

IT has recently been observed, though not for the first time, that we have in memory an intellectual model of the life changes wrought by age in the individual man. We do not, indeed, find any unvarying ratio in the decadence of mental energy characteristic of old age. Many aged persons retain almost to the last a keen interest in the affairs of life and an intelligence capable of shrewd and exact reasoning. They enjoy much of the pleasure of memory both as regards recent events and those long past, with, however, on the whole a distinct preference for the latter. The explanation of this fact has been sought in an assumed division of nerve labour, according to which the earlier impressions of youth and childhood are relegated to special centres other than those in daily exercise. These may be said to lie fallow throughout the greater part of adult life, and to resume their long dormant activity when a species of denudation, a wearing out of the life-wrought brain cells, lays bare the common soil of first and second childhood. The theory is an ingenious one, and hypothetically acceptable where all is uncertain; but it is to our mind somewhat too mechanical. Notwithstanding all that has been said and shown respecting the localisation of motor and sensory functions, we must remember that no such exact arrangement has been proved to exist among the faculties comprised in intelligence. In this connexion, therefore, such localisation is still open to question. As regards the faculty of memory, there is something in its mere evanescence which tempts us to venture another hypothesis. May it not be that the parts impressed, whether especially localised or not, are like some elastic surface deeply stamped for the moment only, and retain but a shadow of the impress in their molecular structure, depending for the permanence of this upon its frequent repetition? If so, we can well understand how the more plastic and susceptible nerve cells of the child, subject as they are to few really deep impressions, retain something like a life-stain of these, which, at a later quiet period out of touch with busy life, shine through the vanishing forms of later ideas to the "mind's eye." Be this or another their true explanation, these earlier memories remain to testify with other proofs of continuing mental vigour the retentive power of nervous matter even in old age. The subject is discussed in his usual lucid manner by Dr. Richardson in this month's *Asclepiad*.

THE DISPOSAL OF REFUSE.

IN a report submitted by Mr. J. E. Cooney to the sanitary authority of Fulham, the attention of the vestry is drawn to two alternative methods for the disposal of the refuse of the parish. The method of cremation by means of destructors is first considered, and then the alternative method of utilising the refuse, as now adopted by the Refuse Disposal Company, Limited, at Chelsea, is described in some detail. This latter method is, in Mr. Cooney's opinion, the one to be preferred; and quite apart from the fact that much useful material is collected and utilised, it is stated to be carried out without any nuisance to the surrounding neighbourhood. Should these views find support, after further inquiry into the methods adopted, the system of utilisation is likely to be tried by other authorities as well as by the vestry of Chelsea.

FREE SHELTERS FOR THE POOR.

MOST persons can appreciate the perplexing dilemma in which Mr. Montagu Williams found himself when, a few days ago, he was called upon to decide between the relative dangers, physical and moral, connected with overcrowding, on the one hand, and vagrant destitution on the other. The difficulty in question arose in consequence of an action brought by the Limehouse Board of Works against the owner of a building used as a free shelter for outcasts. The fact of overcrowding was conspicuously clear according to the evidence of the local sanitary inspector, 384 persons being accommodated, it was said, in the cubic space required for 117. Medical evidence hinted the possibility of typhus fever arising. The utility of the shelter, on the other hand, was attested by an agent of the London Congregational Union, who stated that since last January over 90,000 persons had been lodged there. Mr. Montagu Williams was naturally reluctant to interfere with a work so beneficial in a moral and social sense, though carried out under circumstances the reverse of wholesome. Relying no doubt on the absence of any evidence of serious illness, and on the fact that disinfectants were freely used, he declined to cut off without further consideration the means of maintaining this useful undertaking. The case was therefore

adjourned until next month, by which time the present lease will have expired, and the tenants will be free to seek accommodation elsewhere. We can well understand the sympathy here shown with a struggling effort of philanthropy. At the same time, what is due to health must not be overlooked. The lessons of the case to our mind, though few and simple, are also very memorable. One was aptly impressed by the magistrate when he ventured a hope that public generosity would not long delay in providing more commodious premises. Another, which we would now suggest, inculcates the necessity of some present limitation of the numbers who apply for accommodation; and in view of a rapidly approaching winter the further need of increasing the number of such helpful establishments as the free shelter.

A DEATH ON THE TREADMILL.

WE may probably take it as a proof of careful medical supervision that the labour of the treadmill is not more frequently associated than it is with evident injury to health. The working hours, indeed, as stated at an inquest recently held by Dr. W. Wynn Westcott, are by no means long (five hours and a half, with an interval of two hours), though doubtless long enough for ordinary endurance if we consider its arduous character. In this case the deceased, a man of middle age, a hard drinker, and "used to hard work," died suddenly of syncope while engaged upon the wheel. A post-mortem examination showed incipient signs of fatty heart disease, but no really advanced or obvious cardiac lesion. No blame seems to be attachable to anyone concerned in this case, and no distinct symptoms of disease appear to have shown themselves prior to the suddenly fatal issue. The question naturally suggests itself whether any but prisoners of clearly vigorous and healthy physique should be allowed to serve upon the treadmill at all. It is a question which, as regards theory, would at once be answered in the negative. The severity of this kind of labour is sufficiently attested by the shortness of each working period—a quarter of an hour,—and when we consider the constant strain which it imposes on every muscle of the body, on the function of respiration, and, finally, upon the heart itself, we cannot ignore the need of its restriction as above stated. The question of fitness must, of course, be decided only after duly careful medical examination.

LEGISLATION FOR NURSES.

THE increasing value placed upon skilled nursing in the treatment of disease has made it all the more essential that medical men and the public should be protected from the many ignorant women, and even criminals, who now are able, on the strength of forged or stolen hospital certificates, or even without such testimonials, to obtain work as nurses. For it is a fact which cannot be denied, and the gravity of which is very obvious, that there are probably hundreds of women now engaged in attendance upon the sick who have had neither education nor experience to fit them for their important duties, and that included amongst these are persons who have been imprisoned for more or less serious crimes. We have on many occasions supported the efforts made by the Royal British Nurses' Association to bring about a system of registration of trained nurses, and have much regretted that a small number of hospitals and medical men have so strenuously opposed the Association. How extreme that opposition has been was lately shown when the Association applied to the Board of Trade to be incorporated, under its present name, as a limited liability company. Its opponents actually petitioned the Board, as the anti-vivisectionists also did at the same time in the case of the Institute of Preventive Medicine, to insist upon the word "limited" being added to the name of the Royal Association, as if both societies were ordinary trading bodies. Sir Michael Hicks-Beach unfortunately in both cases yielded to this pressure, and peremptorily refused to associations engaged in great public and professional works the petty privilege they sought, and which has been so frequently granted to small and unimportant companies. In the case of the Institute, powerful remonstrances effected a speedy reversal of this mistaken attitude; but we understand that Sir Michael Hicks-Beach at present adheres to his decision in the case of the Nurses' Association. It is a mortifying reflection that England should be behind her colonies in any matter; but the latest news from the Cape shows that the South African Government assists, instead of attempting to retard, greatly needed improvements. The Cape Parliament has just passed a Medical Act which, with the almost unanimous approval of the hospitals and medical men in the colony, contains clauses inserted at the instance of prominent colonial members of the Royal British Nurses' Association. These provide for the compulsory examination, certification, and registration of all who practise as trained nurses; for the removal from the Register of those who prove themselves unworthy of trust; for the annual publication of the Register; and for the infliction of heavy penalties upon those infringing the Act. We commend this action of the Cape Parliament to Lord Salisbury, and trust that he will take measures as speedily as possible to accord a similar measure of protection to the public, and a similar measure of justice to trained nurses in the United Kingdom.

CONJUGATE DEVIATION OF THE EYES.

DR. GEE has put on record[1] the case of a child in whom this symptom was a prominent one. The patient, aged six, had suffered from measles a year before admission. She had never been well since, and about four months after the illness she lost her appetite, became apathetic, vomited everything she took, complained of pain in the head, staggered when walking, and often fell down. She slept with her head drawn back. Nine months after the attack of measles she had three fits at intervals of a few days. In those attacks she struggled very much, foamed at the mouth, and became quite stiff. A squint came on immediately afterwards, the eyes looking inwards. After a few days they began to turn gradually upwards, and she seemed to lose her sight. About the same time she lost the use of her limbs, and her mind failed. On admission she was dull and apathetic, taking no notice of things around her, but occasionally ejaculating "Don't" when touched. There was retraction of the head during sleep, and also while she was awake. Both eyes were turned upwards; the right eye was also turned a little outwards. There was constant vertical nystagmus, and the pupils were dilated equally. There was no ptosis, and the opthalmoscope showed secondary neuritis. The scalp veins were full, and became more engorged before death. Any palsy was certainly incomplete, as the fingers of both hands could be put into the mouth. There was no rigidity of the arms or legs, the knee-jerks were not obtained, and the sphincters were natural. Vomiting was frequent, the abdomen was retracted, the pulse regular, and the urine natural. She died six weeks after admission. The author remarks that, according to Nothnagel, "in a given case in which the signs point to the existence of a cerebral tumour, there are grounds for localising it in the corpora quadrigemina, or in the region of the corpora quadrigemina, if the following symptoms be present: (*a*) an unsteady reeling gait, especially if this appears as the first

[1] St. Bartholomew's Hospital Reports, 1890.

symptom; (*b*) associated with this gait, ophthalmoplegia existing in both eyes, but not quite symmetrically, or implicating the muscles in equal degree." It is evident that this case fulfilled the conditions. At the necropsy a soft, pulpy, gelatinous mass, of a yellow-pink colour, was found to extend over the surface of the cerebellum above and behind the medulla, and some lobular offshoots of similar appearance involved the cortex of the cerebellum at the sides of the medulla and pons. Between the crura cerebri a large bleb-like sac, as large as a pigeon's egg, and distended with fluid, bulged out, and this was tightly constricted in front by the optic commissure. The corpora quadrigemina were seen to be flattened and distended over a mass of gelatinous pink growth, which formed the anterior projecting extremity of a mass of similar growth filling the whole of the cerebellum, the cortical layers of which acted as a cyst wall and floated over the growth as if it were fluid. The floor of the fourth ventricle was also involved in the growth, and there was an isolated nodule in the anterior part of each lateral ventricle over the corpus striatum, that on the left side being the larger. Although the growth was too extensive to afford much information in regard to exact localisation, the case is a very instructive one with reference to the statement of Nothnagel which Dr. Gee has quoted.

AN ILLEGITIMATE SPECULATION.

THE great majority of medical men happily do not need to be reminded that the profits of practice are most creditably sought and found within the legitimate sphere of its exercise. They will not fail, therefore, to treat with deserved indifference an offer like the following, which for barefaced effrontery could hardly be surpassed among the violations of professional custom. A practitioner sends us the draft of a communication received from a commercial house, promising a substantial discount on so much merchandise if sold on his recommendation. Such a proceding is no doubt quite business-like. It is not on this ground, but on quite another, that we dispute its regularity. It must be allowed that the peculiarly confidential position of a medical adviser towards his patients owes its needful influence almost entirely to a belief in his disinterestedness. It is clear, therefore, that if medical men consented to become the mere agents of a trading company, the trust hitherto reposed in their independent opinion would become impossible. The prescription of drug or diet would in that case presumably be tinctured with commercial considerations, and the resulting loss of dignity thus inflicted on the profession by even one unworthy member could not be compensated by the most liberal discount.

OUTBREAKS OF SMALL-POX.

SEVERAL occurrences of small-pox have taken place in various parts of England, the most notable being at Leeds, Birmingham, Dewsbury, and Ashford (Kent). At Leeds the small-pox hospital has been full, and in another institution people from infected houses have been kept under surveillance during the incubation period of the disease. Had Leeds not elected to remain singular amongst the large boroughs of England in preferring not to know when infectious disease prevailed amongst the inhabitants, the town might probably have been spared this serious and costly outbreak. For, as so often happens, the disease is believed to have had its origin in somewhat obscure cases, which under a notification system would almost certainly have come to light in time to have prevented much of the mischief that has happened. Great energy has been displayed by Dr. Spottiswoode Cameron and the sanitary staff in an endeavour to make up for the lack of early information as to the disease, and much help has been afforded them by the local medical profession. Unfortunately, just as the small-pox seemed to have been dealt with, typhoid fever on a serious scale has broken out. For both these diseases the present season is a disquieting one. At Dewsbury small-pox has been received into the workhouse from Batley, to the great risk of the unfortunate inmates, who have more than once suffered from this unjustifiable practice, which is the result of the failure of the Town Council to do its duty towards this borough by providing a proper isolation hospital. At Ashford, a paper mill is credited with being the cause of the outbreak, but it is satisfactory to learn that the medical officer of health has made a minute inquiry into the circumstances, and that he has, by vaccination, isolation, and supervision of suspected persons, done all that can be done to master the disease. The other occurrences are on a smaller scale, but they will need careful watching lest they lead to a fresh autumnal and winter epidemic.

THE INTERNATIONAL AGRICULTURAL CONGRESS.

AT the meeting of the International Agricultural Congress at the Hague on the 10th inst., the subjects of tuberculosis and pleuro-pneumonia were discussed, in relation to preventive and legislative measures. As to the extirpation of pleuro-pneumonia, M. Ruysch, Councillor of the Ministry of the Interior, presented a report describing the means which had been used in Holland to stamp out the disease; these measures, he said, had been so successful that they were worthy of adoption by other countries. They included the complete isolation of all countries where pleuro-pneumonia was suspected to exist, constant and rigorous surveillance by Government inspectors, the immediate slaughter, under proper regulations, of all infected animals, the destruction by burning of all the diseased organs, and the thorough disinfection of all byres, trucks, &c., in which the diseased animals had been confined.

THE RED CROSS AFLOAT.

CAN the "silent highway" be utilised for the transport of the wounded in war? In other words, can the river-courses, the lakes, the navigable canals—lines which, as is well known, are held to be free by belligerents—be made available for the conveying service of the Red Cross? Such is the question which the Comitato della Croce Rossa Italiana has just made an attempt practically to solve. Its president, Count Gian Luca Della Somaglia, with Count Brunetta d'Usseaux, president of the Italian Rowing Club (*Lago Maggiore*), and Captain Olivari of the Italian Navy, set themselves to the task, first by forming a floating hospital (*ospedale galleggiante*) out of the barges employed on the main waterways for the transport of combustibles; then, having, not without considerable trouble, got their flotilla in working order, they launched it on the Lago Maggiore. Passing thence by canal to Milan, it anchored at the Porta Ticinese, and was there visited by a large number of citizens, including the chief military and civil authorities of Lombardy. It is composed of three barges, two of them fitted up for the accommodation of the wounded, and the third for a pharmacy, a kitchen, and the necessary stores. Of the two hospital barges, one is set apart for wounded officers, the other for wounded soldiers of the line—the two containing each twenty-four beds at present, but capable of including comfortably thirty-six each. These beds are partly on the fracture-board system, partly supported on network of metal, and are all furnished with mattresses and pillows stuffed with *zostera marina* (dried seaweed), which

has the twofold advantage of being non-combustible and (what is more to the purpose) antiseptic. Every night requisite is conveniently at hand, and ventilation is secured by an ingenious canvas awning which gives passage to a continuous circulation of air while protecting the patient from draughts. This contrivance is due to Colonel Gaida, and was found to work admirably. The flotilla is lighted with oil lamps, and the barge reserved for the wounded officers has accommodation at the prow for the *personnel*, superior and inferior. The store barge consists of a dispensary, an *armamentarium chirurgicum* (with complete apparatus for *la medicazione Listeriana*), a provision magazine, with ice machines, and a spacious kitchen, clean to a whim, and capable of supplying 250 mouths (*bocche*). There is also a complete system for storing and keeping cool and pure a perennial water-supply—a system due to the Cavaliere Borroni, secretary to the Milanese Committee of the Red Cross. The flotilla is composed of nine barges in all—the three above described having been sent down to Milan for exhibition from the Lago Maggiore, while the remaining six are in dock at Arona, on the southern extremity of the lake. These barges are moved on the lakes by steam, on the rivers by the current, on the canals by towing horses. From Milan accordingly the flotilla proceeded by canal to Pavia, and from Pavia it will drift down stream to Piacenza, at every station commanding, or sure to command, the highest admiration. The experiment—the first of its kind ever made—is a worthy complement to the mountain ambulances of the Italian Red Cross Association, to which we lately drew attention, and places Italy in an honourable position among the nations for her efforts to mitigate the horrors of war.

CHRONIC FIBRINOUS PHARYNGITIS.

A SOMEWHAT rare case of pharyngitis, occurring in a medical man, is reported by Dr. Onodi. The patient was about thirty years of age, and had first observed that his sputa contained false membrane as long ago as the end of 1888; at that time he experienced some difficulty in swallowing, and suffered from pains which appeared to arise from behind the soft palate. Since that time he observed on the posterior wall of the pharynx the development and separation of false membranes, which took place at intervals of a few days. Occasionally the visible part of the posterior walls of the pharynx remained quite free for three weeks at a time; but at such periods he experienced pain which radiated towards the ear, his own diagnosis, which appeared to Dr. Onodi to be correct, being that the fibrinous inflammation was spreading upwards in the naso-pharyngeal space. During the present year the affection has undergone some improvement, but the patient has all along suffered from considerable pain in the ear, headache, and depression of spirits, with occasional attacks of epistaxis. The nose itself has been free from membranes. The sputum, when microscopically examined, showed that the pseudo-membranes were of a croupous character, being composed of a fibrinous network, and containing micrococci. The only treatment that appeared to be of any use was insufflation with sozoiodolate of zinc and morphia.

SEA-NETTLES.

THE bathing season for the present year, despite the grateful and unexpected glimpse of real summer weather which we were lately afforded, is practically over. Its benefits, seldom of late lavished with too genial warmth, will soon come from a cold and grudging hand. Its risks, increased by a wintry chill, must deter any but the more youthful, hardy, and robust from the sharp refreshment of a swim. It is at this season also, as we are reminded by a contemporary, that salt water teems with the irritating swarms of the meduside. The stinging filaments contained in the thread-cells of these animals are not usually capable of penetrating the human skin. Occasionally, however, they are in this respect very uncomfortably potent, and we can well understand how a bather who recently swam against a sea-jelly was obliged to send for medical aid in order to obtain relief from the smarting contact. As a rule, those meduse which are uniformly bluish-white in colour are inert, while those of smaller size, and with reddish-brown tentacula, possess well-marked irritant properties. A generally refrigerant and laxative course of treatment, combined with warm bathing, will usually relieve the pain produced by contact with this nettle of the sea.

TYPHOID FEVER AT ST. HELENS.

TYPHOID FEVER is seriously prevalent at St. Helens, and according to Mr. M'Nicoll it is due to infected milk. One cow in the suspected shippon was found to be very ill; it was removed, and the milk was ordered to be thrown away. It is not stated whether the cow malady in question was supposed to throw any light upon the occurrence of typhoid fever, or what was the assumed source of the infection of the milk. Only half the sufferers were found to get their milk from the dairy in question; so that, unless all the other cases were secondary attacks, some other cause or causes of typhoid fever must be in operation in St. Helens, and it is to be hoped that the discovery of a cause of half the attacks will not be allowed to obscure the origin of the others, and the adoption of the needed preventive measures.

THE NIGHTINGALE FUND.

THE yearly statement issued by the secretary of the Nightingale Fund Committee for 1890 shows that there were forty-seven probationer nurses admitted into the Training School, or Nightingale Home at St. Thomas's Hospital, during the year, making, with those remaining from 1889, eighty who were under training. Of those admitted during the year eighteen resigned, or were discharged as unsuitable for the work. Thirty probationer nurses were entered on the register of certified nurses, after satisfactorily completing their year of training. Of these, fourteen were special probationers and sixteen nurse probationers. The annual gratuity of £2 allowed by the regulations for the term of three years to the certified nurses who have completed a year's service to the satisfaction of the authorities in some approved hospital or other institution for the benefit of the sick poor, was awarded to sixty-six nurses. A list of the appointments which have been received by former probationer nurses is given, and includes chiefly the names of places in England, but these are not the only places to which the nurses are occasionally sent; the matron of the Civil Hospital, Gibraltar, has been selected from this school, and we know of other matrons who represent this school in hospitals abroad; its influence is thus widespread. From the opening of the school in 1860 to the end of 1890 1052 candidates have been admitted, and 634 have, after completing the year's training, received appointments in some public hospital or infirmary or other institution for the benefit of the sick. The matron reports favourably of the application to study of those under training. The medical report states that there had been six cases of influenza, but no other illness of any significance, among the probationers. At the St. Marylebone Infirmary, where the training school is a branch of the Nightingale Home, eleven probationers had completed their year's training, and had all received appointments as nurses on the staff of the infirmary. From the abstract of accounts it appears that the special probationers contributed £201 to the funds of the school.

The cost of training hospital nurses at St. Thomas's Hospital was £1498 5*s.* 11*d.*, and the contributions to the expenses of the training school at St. Marylebone were £170 15*s.* These, with other items of expenditure, leave the fund with a balance in hand of £266 18*s.* 11*d.* Whilst attention is directly called to the National Pension Fund for Nurses, no chance is afforded the nurses of comparing the advantages offered them by this with those given by the Royal British Nurses' Association, and the fact that such an Association exists seems to be carefully kept from their knowledge. It is hardly to be credited that the statement of the working and administration of a public fund should be thus used. Let both schemes be placed before the nurses in the statement, or let other means be adopted of making the private opinion of those in authority at the school known to those under their influence.

YELLOW FEVER.

ON the one hand we learn of a prevalence of yellow fever along the coast towns of Mexico, and notably at Vera Cruz, and on the other we find signs of the disease nearer home, for the Pacific Navigation Company's steamer *Esorata*, which arrived in Plymouth Sound on Monday, had had the disease amongst her crew and passengers, two cases having terminated fatally.

RUPTURE OF THE STOMACH.

DR. KEY-ABERG publishes in a Scandinavian medical journal an account of a case in which the stomach of a patient seemed to have been ruptured from the use of a stomach-pump. The patient was a man who had taken fifteen grains of opium with the object of committing suicide, and who had not been brought to hospital until three hours had elapsed. Under these circumstances the stomach was washed out somewhat hastily several times; each time it was remarked that only a portion of the water that had been injected returned. The patient died three hours after admission. At the necropsy it was found that the small curvature of the stomach had sustained several longitudinal ruptures, which, however, were confined to the mucous coat. The author was induced by this observation to make some experiments on dead bodies, which showed that an injection of three or four quarts of water into the stomach under a pressure of about ten inches of water produced similar injuries, and that these gradually increased, and ultimately became complete ruptures through the whole of the coats of the organ.

THE ITALIAN CONGRESS OF INTERNAL MEDICINE.

AN Italian correspondent writes:—"From year to year this meeting gains in importance. Already, indeed, as its published 'Atti' evince, it may rank with the best of similar congresses in Europe. Its promoters spare no endeavour to make its proceedings as thorough and effective as possible, and have devised for it at least one good feature which might be imitated with advantage. Before the Congress rises a selection of subjects is made (generally two, or sometimes three) among the problems in diagnosis or treatment most in need of a practical solution. 'Reporters,' consisting of two or more clinical teachers of recognised ability, are told off to make a special study of each problem; and at the end of the year they are ready with their 'report,' which, as laid before the Congress, meets with an audience prepared, also by independent study, to consider and criticise it. The discussions thence arising are always interesting, and generally, if not conclusive, at least helpful—marking a solid advance on the relative theory and practice of the former year. Much rambling talk is likewise avoided, and the time and attention of the audience are economised. This feature of the Italian Congress of Internal Medicine, which meets for the fourth time in October next, will be as commendably prominent as on previous occasions. Rome is to be the place of meeting, and the 19th, 20th, 21st, and 23rd of the month are the days appointed for the sittings. Its president will be Dr. Guido Baccelli, and every great Italian school is represented on the organising committee. The Congress liberally invites all interested in the healing art, in its widest acceptation, to assist; and a subscription of ten francs entitles the subscribers to reduced railway fares from any part of the peninsula to Rome, and also to a copy of the official 'Atti' when published. Communications addressed to Professor E. Maragliano of Genoa (Via Galata, No. 39) will receive every attention. October is perhaps the most delightful month of the Italian year—the 'Ottobrate' being famous, even in Italy, as the perfection of autumnal weather. English physicians might do worse than take a week in Rome during the sittings of the Congress."

LEPROSY IN THE MIDDLE AGES

LIKE the Jews, lepers were obliged by mediæval law to wear a special costume. It consisted of a tunic or mantle, called by contemporary French writers *housse* or *esclavin;* it was generally gray, sometimes black. A hat, sometimes scarlet, or a hood was also part of their vestment. Among the articles they were allowed to carry were the wallet, the pannier, and the *crécelle* or rattle, with which they made a noise to warn people of their approach. A provincial council held at Marciac, Dec. 6th, 1330, by William de Flavacour, Archbishop of Auch, prescribed to the lepers, as to the Jews, the wearing of a visible sign by which they might be distinguished (*Et tam Judei quam leprosi signa patentia deferant ut ab aliis discernantur*). What were these signs? At this time of day it is difficult to ascertain them. M. Ulysse Robert, however, has found in an ordinance issued at Castres in 1345 that no inmate of the leper hospital there was allowed to enter the town unless he had a *drap blanc* round his neck and the rattle aforementioned. And not only the lepers, but those in charge of them were bound to wear some such distinctive mark. Louis Guillard, Bishop of Chartres, ordained March 31st, 1520, that the brothers of the Grand Beaulieu, an establishment for lepers, should wear on their dress a capital L of red cloth, half a foot long, over their left breast; and this because they were in frequent contact with lepers, and might communicate the disease.

THE GUILD OF ST. CECILIA.

It appears that the value of music as a therapeutic process is about to be tested by practical proof. An association has been founded under the title of the "Guild of St. Cecilia" which proposes to maintain a staff of skilled musicians who shall exercise their art in the neighbourhood of the sick under certain regulations. The instruments to be employed, besides vocal harmony, are the pianette, harp, and violin. Hospital patients are to be treated if required individually by telephonic communication. The society will set itself to obtain professional opinions as to the maladies to be thus treated, and to tabulate cases in which benefit has resulted from this novel remedy. Let us hope that in fairness cases where expected success has not followed will also be recorded. In former issues we have discussed the place and value of music as a restorative or calmative in illness. That it does in some degree possess such faculties we cannot doubt, especially where nervous excitement or exhaustion are prominent features in the malady under treatment. At the same time we should

be very sceptical of its power to alter materially the course of any serious morbid condition. However, the Guild of St. Cecilia, if unlikely to accomplish from a therapeutic point of view all that its kind-hearted and well-intentioned promoters would desire, is founded on a basis of such "goodwill towards men," and embodies an idea so pleasing—namely, that of invoking the services of melody and harmony in aid of suffering,—that its progress cannot but be watched with sympathic interest. We are asked to state that as the committee of the St. Cecilia Guild desire to obtain the best opinions respecting the character of the music that should be played to invalids, physicians and surgeons of experience are invited to be present at the rehearsal of their choir on Monday next, the 21st, at 5 P.M., in room No. 4 of the Westminster Palace Hotel.

FOREIGN UNIVERSITY INTELLIGENCE.

Berlin.—Dr. Skrzeczka has been promoted to an ordinary Professorship of Hygiene.

Moscow.—Dr. Ogneff has been appointed Extraordinary Professor of Embryology, Histology, and Comparative Anatomy.

Prague (Bohemian University).—Dr. Maydl of Vienna has been appointed to the chair of Surgery.

Tomsk.—Drs. Korkunoff, Salischeff, and Sudakoff have been promoted respectively to the chairs of Therapeutics, Surgery, and Hygiene.

Tubingen.—Dr. Dennig has been recognised as *privat-docent* in Medicine.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Huet, late Professor of Clinical Medicine in Leyden; Dr. Sheremetievski, Professor of Physiology in the University of Moscow; Dr. Castan, Professor of Clinical Medicine in the Medical Faculty of Montpellier.

THE report of Messrs. Crookes, Odling, and Tidy on the character of the water supplied to the metropolis during the month of July is very favourable, the proportion of organic matter present in the water being below even the exceptionally small amount recorded in May. There was not found to be any appreciable difference in character between the water distributed by the five companies taking their supply from the Thames and the water distributed by the East London Company, who take their supply from the Lea; but what slight difference was found to exist was in favour of the Lea-derived water.

AN attempt is to be made to induce the Government to appoint a Royal Commission to inquire into the working of all the institutions under the control of the Metropolitan Asylums Board. The attempt is deserving of success, inasmuch as an inquiry by such means would be free from the objection which has gone far to discredit the result of the official investigation into the complaints urged against the management of the Homerton Hospital.

THE Canadian Medical Association has been in session this week. The address in Surgery was delivered by Dr. Praeger, Nanaimo, B.C.; the address in Medicine by Dr. Bray, Chatham, Ont.; and the address in Therapeutics by Dr. Spencer, Brandon, Man. Many subjects of prominent interest appear to have been brought under discussion.

INFLUENZA is reported to have appeared in Chatham convict prison, and to have attacked fatally two of the inmates, who succumbed to pneumonia.

THE most important event in medical Italy last week was the Medico-Psychological Congress at Milan. The proceedings, under the presidency of the venerable Dr. Verga, senator of the kingdom, were exceptionally interesting in their tenour, and we hope to give some account of them in an early number. The seat of the next (the eighth) Congress will be Rome, and its president Dr. Biffi.

THE sanitary authority of Gloucester, at a meeting on the 8th inst., adopted the Infectious Diseases (Notification) Act without serious opposition.

ARMY MEDICAL REPORT FOR 1889.

(CONCLUDING NOTICE.)

IT now only remains for us to consider the appendix to the report, containing contributions from officers of the department on medical and surgical subjects, together with papers on the Progress of Hygiene, Notes on the Tenth International Medical Congress of 1890 at Berlin, Bacterial Cultivations in Drinking Water, and other matters of a sanitary or professional nature. The first paper is by the Professor of Military Hygiene at Netley, on the progress of hygiene for the year 1889. Adverting to the good effects which the appointments under the Public Health Acts have had on the progress of practical sanitation, Professor Notter points out that the system will provide, *inter alia*, for a uniform method of statistics and reports, and trained sanitarians will be at the disposal of the county authorities, well qualified to investigate and report on the local outbreaks of disease. After some remarks on legislation, work of societies, and literature in connexion with public health, we are furnished with a list of the samples of water, foods, wines, &c., which were submitted to analyses and specially reported on to the War Office during the year. The number of these samples amounted to 127. The usual table of water analyses is appended, in which the source, physical characters, results of microscopical examination of the sediment, and quantitative analysis in parts per 100,000 of seventy-nine samples of water are set forth, together with a report on the experiments undertaken to test the power of the Chamberland porcelain filter in removing micro-organisms from water.

The notes on the tenth International Congress at Berlin touch upon several interesting points, as, for example, a brief *précis* of Professor Kelsch's paper on typhoid fever in certain conditions of military life as deduced from observations of that disease in the French army in Algeria and in France generally, on weight and chest measurement in relation to height by Dr. Seggel of Munich, and other papers read at the Congress; and a statement of the material exhibited by the medical department of the German War Office. Under the heading of first field dressings a brief record of the history of the subject is given, followed by a summary embodying the outcome of all the discussions that have taken place in regard to it during late years. It is stated that the medical department of the French army has lately introduced a dressing which is the ideal of what a field dressing should be. This report is worth reading if only for the information it affords about antiseptic dressings and dressing materials, surgical instruments and instrument cases, ligature material, field medical organisation, the description of the Army Medical School in Berlin, and the recent advances in the German medical service in providing laboratories and all the apparatus and means necessary for the practical pursuit of bacteriological investigations. It seems strange that in a country like India, for example, where epidemics and outbreaks of epidemic disease are not very uncommon, nothing should have been hitherto done in the last-named direction. Why should not the plan adopted and followed in the German Army Medical Service for the systematic investigation of disease-causes be tried in India, and something done there in the way of constituting a public health department, composed of officers of the public works and medical services, at some of the larger military centres where statistical information as to the prevalence of disease

at any given district or station could be received and acted upon at once, and with a practical sanitary aim in view?

The Assistant Professor of Hygiene at the Netley School contributes an excellent paper on Bacterial Cultivations in Drinking Water, summarised from three years' observations. The results from bacterial cultivations were, on the whole, in accordance with those from chemical examination, but not by any means invariably so. The indications afforded by the chemical analysis are, it is stated, more trustworthy in enabling one to form a judgment of the quality of a drinking water than those afforded by bacterial cultivations, and in the case of a conflict between these indications Surgeon A. M Davies would rather rely on those of the chemical examination. A comparatively rough-and-ready cultivation method, such as taking account of the presence or absence of liquefaction, its rapidity or slowness, and the number and amount of organisms present, is of little use. A method still remains to be discovered by which a more minute examination may be made practicable under ordinary circumstances.

The paper containing a list of operations performed at the Royal Victoria Hospital, Netley, during 1890, with short abstracts of the more important cases which follow, includes some good practical information, and we may congratulate its author on having been since promoted to the professorial chair of Military Surgery vacated by Sir Thomas Longmore. The assistant professor of military medicine, Surgeon-Major Stevenson, has a report from the medical side of the same hospital. It contains abstracts of some interesting cases. Speaking of twelve cases of Mediterranean fever treated in the hospital during 1890, it is remarked that the most noticeable features were the proneness to relapses, the rheumatic affection of joints, and the futility of drugs in their treatment. Local paralysis during convalescence was sometimes observed. In a case of enteric fever treated in the medical division, the use of cold air was found efficacious, and the method of applying it, by means of a large cane-work cradle with salt and pounded ice suspended from it, is described. Cannabis indica, as recommended by Surgeon Rennie in subacute and chronic cases of dysentery, is said to have been tried with good effect in the treatment of that disease. The report on cases treated with tuberculin, and illustrated with charts, is very carefully drawn up; but this method has been the subject of so many observations and reports that it has been pretty well threshed out. Surgeon G. E. Moffet's report on the fevers of Gibraltar is an exhaustive and painstaking paper, and those on a case of hysteria in a soldier, one of gunshot wound inflicted by a bullet from the new magazine rifle, a short report of successful trephining of the mastoid cells for abscess, and notes about a case of localised spinal injury, are distinctly interesting.

Considering the large and varied field of observation open to military medical officers, we should be glad to see a larger number of contributions to these volumes from officers serving abroad. It is quite right that Netley should furnish papers and reports giving a *précis* of the progress of hygiene, medicine, and surgery, but there must surely be a large number of officers distributed over the world whose clinical observations and the impressions which they have personally received from the practice of their profession would be worthy of record in these reports.

THE FUTURE OF ELECTRICITY.

THE use of electricity as a lighting agent and vehicle for the transmission of power is a matter which has shown in recent years so many signs of advance that very little doubt exists, even in the minds of those to whom the subject is only familiar in a general sense, that great developments in this direction are to be looked for in the near future. It is therefore very natural and very opportune that the necessary fixing of standards should at the present time engage the serious attention of the authorities charged with that duty. The committee appointed by the Board of Trade to consider the standards which should be sanctioned has reported in favour of a minute change in the value of the ohm (the standard of resistance), and the adoption of definitions for the volt (the measure of electrical pressure) and the ampère (the measure of electrical flow), which will bring them into conformity with the new value of the ohm upon the basis of the time relations already established by scientific usage between these three fundamental units. The report will no doubt be adopted and acted upon, and the proposed standard measures duly ascertained and authenticated, since the production of instruments which will embody the scientific definitions in a tangible form and with all desirable accuracy is only a question of time and money, presenting no difficulties which the ingenuity of a trained mechanician may not be expected to overcome. But more important than those questions of commercial availability which the settlement of measures is intended to promote is the other question of the bearing upon the health of the community of the use of electric light and power. In a general sense, the employment of electricity and the consequent displacement of gas flames and coal fires is undoubtedly a step in the right direction. An electric lamp consumes no oxygen, and an electro-motor develops no smoke. Those are matters of capital importance, and matters which, with the continual growth of urban populations, tend year by year to assume more commanding proportions. Yet the use of electricity is by no means without its perils, and it is a misfortune that the rule of economy seems to prescribe in many circumstances—indeed, in most—recourse to that form of the electric current which involves the most serious risk of accident. As between the continuous and the alternating current, the discussion has hitherto amounted pretty much to this: continuous for safety, alternating for economy; and the only possible solution of a given problem in electric supply has been a sacrifice in greater or less measure of one of these important interests to the other. Such a condition of things, while it lasts, must of necessity constitute a great hindrance to the wide-spread employment of this most valuable agent. The cost of an expensive current and the perils of a dangerous current are both too serious to be lightly encountered. It is therefore natural that no small interest should be awakened by any suggestion, fit to command consideration, of an invention which will effect a reconciliation between the opposing conditions and present us with electricity in a form in which it will be both cheap and safe. For such a suggestion Mr. Nikola Tesla appears to have made himself responsible in a paper recently communicated to the Institute of Electrical Engineers at New York. The principle to which he draws attention is one that any electrician can avouch, although we are not aware that it has ever heretofore occurred to anybody that therein lay the germ of important industrial developments. Shortly it may be stated thus. The charging and discharging of an electrified body are both operations which result in manifestations of energy that are in many particulars similar to one another. For example, it is impossible to tell by the mere examination of the light of an electric lamp whether its temperature is maintained by the uninterrupted passage of a continuous current or by the rapid oscillations of an alternating current. But in one important particular these two operations are wholly unlike and supplementary to one another; that is to say, the operation of charging hinders further charging, but facilitates subsequent discharging, and similarly the operation of discharging facilitates subsequent charging. This is indeed mere truism stated thus, but its importance becomes apparent when it is borne in mind that the capacity of any body for electricity is measured not merely by its dimensions, but also by the extent of variation of its greatest and least potentials. That is to say, the electric energy stored in a given conductor charged with electricity at a thousand volts is ten times as great as that of the same conductor charged at one hundred volts. In this there is of course a strict analogy to other physical conditions. The strength of a solution, for example, is within limits proportioned to its concentration, and the potential energy of a heated body is similarly proportioned to its temperature—itself a measure of the concentration of its heat. But the analogy between the electrical charge and the chemical or thermal energies latent in a body breaks down when we come to compare the phenomena of discharge; for whereas it takes longer to exhaust a highly concentrated solution than a weak one, or to cool down a very hot body than one having a lower temperature, there is absolutely no difference in the time occupied in the discharge of high voltage and of low. Herein lies the germ of the adaptation which Mr. Tesla claims to have effected. If the gas in a cylinder could be as instantaneously heated through a thousand degrees of tempera-

ture as through a small fraction of a degree, the steam-engine might be reduced to a hundredth part of its present proportions, and its efficiency indefinitely extended. The assumed condition, which is quite unattainable in any case of thermal energy, is perfectly easy to realise in the case of electric energy, and if it be successfully turned to account, we may confidently expect to see some very remarkable results. Our present methods of using electric power do not take advantage of this peculiarity of the electric charge to any appreciable extent. It is true indeed that the possibility of exciting an alternating current in a conducting circuit depends upon this curious facility of charge and discharge; but the alternating current as at present utilised does not merely enter and leave the converting devices, such as incandescent lamps, which change it into light or heat or mechanical power. On the contrary, it goes through them at every oscillation, and a return wire is just as indispensable a part of an alternating as of a continuous current installation. In other words, the filament—to take the incandescent lamp as a typical instance—receives much more energy in the form of current than it can actually use, and restores a very large proportion of what it receives to the generator in the form of a return current. The scheme now propounded is to supply to the filament only so much current as it can actually convert into light, or, if any excess, so much only as is necessary to supply the waste caused by the imperfection of the apparatus. To convey this quantity into the filament, or whatever takes its place, reliance is placed upon the great capacity for receiving and discharging current which even a small body acquires by being rapidly charged and discharged when operated between wide limits of potential; and Mr. Tesla claims that in this way he has operated lighted lamps with quantities of electricity which may well be described as being incredibly small.

The position thus taken up may be the better understood if the actual conditions are realised under which these interesting experiments have taken place. Of such details there is some lack in Mr. Tesla's paper, which, indeed, is of a somewhat markedly popular character; but we gather that the current with which he works has the enormous frequency of 20,000 alternations in the second and upwards, and a pressure of something like 10,000 volts. It may well be believed that a filament subjected to such impulses behaves very differently indeed from anything with which we are at present familiar, and it is in no way surprising to read that it takes up sufficient electricity, even without being connected to any return wire, to keep it in a state of brilliant incandescence. This, upon the point of economy, is a matter of prime and obvious importance. But a little reflection will show that it is also a matter of no less importance under the point of view of its bearing upon the danger involved in handling the apparatus. For the amount of electricity which a lamp filament can consume in the twenty-thousandth part of a second must be extremely small, and no more than this quantity can, on the conditions defined, be required in the system of the lamp at any one time. The alternating lighting systems in present use have frequencies of perhaps 1000 or 2000 alternations in a second. If it be found practicable to jump to 20,000 alternations in the same period of time, the strain on the transmitting conductor will, by the subdivision of its work, be proportionately reduced and the danger from the shock of an accidental contact with it in a corresponding degree. What this degree will be cannot at present be said, for it is manifestly impossible to predict what the physiological effect would be of an electric impulse, great or small, repeated at such infinitesimally short intervals of time. On this point Mr. Tesla speaks with some natural hesitation, but he intimates that experiment points in the direction of a great gain in point of safety. Indeed, we understand him to say that a single lamp current of the kind that we have referred to may be passed through the body without inconvenience if precautions are taken to prevent local burning at the points of contact with the charged conductor. This may be the case, for, as we have pointed out, the experience already gained affords no ground of inference as to what would happen under such very novel conditions as those now proposed. The very unpleasant properties of a current of high tension and alternating direction have effectively deterred investigators from hitherto carrying out any complete inquiry into its physiological properties. It may well be, for aught that is at present known, that its subdivision in the manner now suggested may reduce its terrors to the measure commensurate, or even more than commensurate, with the diminution of what may perhaps be called the volume of the current passing at any given instant of time. It may equally well be that the change in the direction of improved safety is even greater than this, for it by no means follows from the extreme sensitiveness of the nervous system to impulses delivered at the rate of one or two thousand in the second that it would be equally sensitive to impulses delivered with ten times that frequency. But these are matters upon which it is idle to speculate. If it should prove possible to pass an alternating lamp current through an experimenter's body, the experiment will be none the less interesting for its somewhat sensational features. But although great and even boundless possibilities may be conceived to lie in this unexplored region, it would be very precipitate to conclude, from the wholly incomplete information at present received, that the very interesting and ingenious views which have been promulgated in New York are destined to become the origin of a new departure of practical importance. It is easy to see that great practical difficulties must embarrass the working out of such a scheme of operations as we have been considering. There is, for example, the familiar difficulty of insulating conductors subject to high pressure to be dealt with, and here it may be reasonably expected to be met with in an aggravated form. Moreover, the electrostatic capacity of the transmitting conductor will of itself assume an importance altogether new. These and other points which will at once suggest themselves to the mind of the reader who is familiar with such topics serve to enforce the sufficiently obvious counsel of moderate expectations where so large an innovation is concerned. But whatever the immediate outcome of Mr. Tesla's suggestions, it can hardly happen that attention should be widely directed to the points which he has certainly brought out into bold relief without some resulting advantage to the arts which the study of electricity has already so powerfully subserved.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN twenty-eight of the largest English towns 5735 births and 3118 deaths were registered during the week ending Sept. 12th. The annual rate of mortality in these towns, which had been 18·1 and 16·8 per 1000 in the preceding two weeks, rose to 17·3 last week. The rate was 15·0 in London and 19·1 in the twenty-seven provincial towns. During the past ten weeks of the current quarter the death-rate in the twenty-eight towns averaged 18·0 per 1000, and was considerably below the mean rate in the corresponding periods of the ten years 1881–90. The lowest rates in these towns last week were 10·9 in Huddersfield, 11·3 in Norwich, 12·5 in Halifax, and 14·8 in Cardiff; the highest rates were 24·2 in Preston, 24·7 in Newcastle-upon-Tyne, 25·1 in Blackburn, and 26·2 in Sunderland. The deaths referred to the principal zymotic diseases, which had declined in the preceding six weeks from 653 to 485, further fell last week to 456; they included 273 from diarrhœa, 73 from whooping-cough, 32 from "fever" (principally enteric), 27 from measles, 27 from scarlet fever, 24 from diphtheria, and not one from small-pox. The lowest death-rates from these diseases were recorded in Bristol, Halifax, Huddersfield, and Cardiff, and the highest in Bolton, Preston, Newcastle-upon-Tyne, and Leicester. The greatest mortality from measles occurred in Sunderland; from scarlet fever in Bradford; from whooping-cough in Newcastle-upon-Tyne, Bolton, and Plymouth; from "fever" in Birkenhead; and from diarrhœa in Portsmouth, Newcastle-upon-Tyne, Bolton, Blackburn, Preston, and Leicester. The 24 fatal cases of diphtheria included 17 in London and 3 in Manchester. No death from small-pox was registered in any of the twenty-eight towns; 2 cases of this disease were under treatment on Saturday last in the Highgate Small-pox Hospital, but not one in any of the Metropolitan Asylum Hospitals. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 993, against 967 and 947 on the preceding two Saturdays; the patients admitted during the week were 151, against 110 and 97 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had

been 150 and 155 in the preceding two weeks, declined last week to 145, and were 20 below the average. The causes of 61, or 2·0 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Sunderland, and in four other smaller towns; the largest proportions of uncertified deaths were recorded in Halifax, Brighton, and Liverpool.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·6 and 18·5 per 1000 in the preceding two weeks, further rose to 18·7 during the week ending Sept. 12th, and was 1·4 above the mean rate that prevailed during the same period in the twenty-eight large English towns. The rates in the eight Scotch towns ranged from 14·0 in Aberdeen and 14·9 in Leith to 21·0 in Paisley and 22·0 in Dundee. The 481 deaths in these towns showed a slight increase upon the number in the preceding week, and included 35 which were referred to diarrhœa, 15 to whooping-cough, 14 to "fever," 4 to diphtheria, 4 to scarlet fever, 3 to measles, and not one to small-pox. In all, 75 deaths resulted from these principal zymotic diseases, against 78 and 72 in the preceding two weeks. These 75 deaths were equal to an annual rate of 2·9 per 1000, which was 0·4 above the mean rate from the same diseases in the twenty-eight English towns. The fatal cases of diarrhœa, which had been 47 and 45 in the preceding two weeks, further declined last week to 35, of which 20 occurred in Glasgow, 6 in Edinburgh, and 4 in Dundee. The 15 deaths from whooping-cough exceeded by 2 the number in the previous week, and included 11 in Glasgow. The fatal cases of "fever," which had been 8 and 7 in the preceding two weeks, rose again last week to 14, a higher number than has been recorded in any week since the beginning of this year; 13 occurred in Glasgow and 1 in Paisley. The 3 deaths referred to measles, and 2 of the 4 deaths from scarlet fever, were registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had increased from 63 to 82 in the preceding three weeks, declined last week to 62, and were 22 below the number in the corresponding week of last year. The causes of 38, or nearly 8 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·9 and 18·5 per 1000 in the preceding two weeks, rose again to 22·1 during the week ending Sept. 12th. During the past ten weeks of the current quarter the death-rate in the city averaged 19·9 per 1000, the rate for the same period being 17·9 in London and 16·1 in Edinburgh. The 151 deaths in Dublin during the week under notice showed an increase of 24 upon the number in the preceding week, and included 14 which were referred to diarrhœa, 3 to "fever," 1 to whooping-cough, and not one either to small-pox, measles, scarlet fever, or diphtheria. In all, 18 deaths resulted from these principal zymotic diseases, equal to an annual rate of 2·6 per 1000, the zymotic death-rate during the same period being 2·2 in London and 1·4 in Edinburgh. The fatal cases of diarrhœa, which had been 4 and 9 in the preceding two weeks, further rose last week to 14, a higher number than in any previous week of the year. The 4 deaths referred to different forms of "fever," which had been 4 and 2 in the preceding two weeks, rose again to 3 last week. The 151 deaths in Dublin included 35 of infants under one year of age, and 32 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons exceeded the numbers recorded in the preceding week. Five inquest cases and 3 deaths from violence were registered; and 56, or more than a third, of the deaths occurred in public institutions. The causes of 23, or more than 15 per cent., of the deaths in the city were not certified.

THE SERVICES.

ARMY MEDICAL STAFF.—Surgeon-Major-General G. M. Slaughter, Principal Medical Officer, Southern District, having attained the prescribed age, is placed on retired pay.

INDIAN MEDICAL SERVICE.—*Bombay:* Surgeon-Major George Bainbridge (dated Sept. 18th, 1890) and Surgeon-Major James Arnot, M.D. (dated April 30th, 1890) to be Brigade Surgeons.—The Queen has approved of the retirement from the Service of Brigade Surgeon Robert George Mathew, Bengal Medical Establishment (dated Aug. 11th, 1891).

NAVAL MEDICAL SERVICE.—The following appointments have been made at the Admiralty:—Staff Surgeons: Arthur W. Russell to the *Penelope* (undated); Wm. R. White, M.B., to the *Raleigh*, and George S. Smith to the *Hotspur* (all dated Sept. 16th, 1891). Surgeons: Walter Bowden to the *Raleigh* (dated Sept. 16th, 1891); George A. Holroyd to the *Raleigh* (undated); A. G. Wildey to the *Bellerophon* (undated); Arthur S. Nance to the *Shannon;* William G. K. Barnes, M.D., to the Royal Marine Depôt, Walmer; Robert H. Nicholson to the Cape of Good Hope Hospital; and Elrington F. S. M'Kay to the *Swallow* (all dated Sept. 14th, 1891); Mr. Ebenezer Snell, to be Surgeon and Agent at Brighton and Blackrock (dated Sept. 15th, 1891).

The death is announced of Staff Surgeon John Joliffe, R.N., aged sixty-nine. Mr. Joliffe was the son of Colonel Joliffe, and joined the navy as assistant surgeon in 1845. He was the only surgeon present at Sir T. Cochrane's operations against the Malay pirates on the Coast of Borneo in 1846. His services also in the *President* during the operations against Angoza, Mozambique, were such as to secure for him honourable mention in despatches. He became staff surgeon in 1850, and was awarded a Greenwich Hospital pension in 1887.

YEOMANRY CAVALRY.—Westmoreland and Cumberland: Joseph Edward Bowzer, M.B., to be Surgeon (dated Sept. 12th, 1891).

VOLUNTEER CORPS.—*Artillery:* 1st Worcestershire: Acting Surgeon David Rice to be Surgeon (dated Sept. 12th, 1891).—*Royal Engineers:* 1st Devonshire and Somersetshire: Joseph Fuller, Gent., and William Lloyd Edwards, Gent., to be Acting Surgeons (both dated Sept. 12th, 1891).—*Rifle:* 4th Volunteer Battalion, the King's (Liverpool Regement): Acting Surgeon Geo. Goodfellow Hodgson to be Surgeon (dated Sept. 12th, 1891).

Correspondence.

"Audi alteram partem."

INJECTION OF SALINE SOLUTION FOR HÆMORRHAGE.

To the Editors of THE LANCET.

SIRS,—In answer to several inquiries as to the kind of instruments used in the injection of a saline solution into the circulation of a patient dying from loss of blood reported in THE LANCET (Sept. 12th, p. 626), I would say that they consisted of a fine metal nozzle, to which about a foot of rubber tubing was attached. The fluid, which consisted of a solution of twenty grains of common salt in a pint of boiled water, was injected warm by means of an ordinary large syringe, air being carefully excluded from any part of the apparatus. I have since used this injection in two cases of hæmorrhage of a less severe character than the one already described with very great benefit.

I am, Sirs, yours faithfully,

Sept. 17, 1891. W. ARBUTHNOT LANE.

A simple apparatus can be obtained from Messrs. Down Bros., St. Thomas's-street, S.E.

To the Editors of THE LANCET.

SIRS,—I often heard the late Dr. Wooldridge, when I was his house-physician, speak of his experiment of bleeding a dog to apparent death, and then by intravenous injection of as much saline solution as it had lost blood, restore it not only to life, but to such immediate activity that within half an hour of the double operation it was able to run about the laboratory, and eat a hearty meal of beef-steak as if nothing had happened to it. He was at that time very anxious for an opportunity of seeing this treatment applied to a case of hæmorrhage in the human subject, and was as certain of its success as he was contemptuous of

transfusion of blood as a remedial measure. How well founded his confidence was is shown by the brilliant success which has attended Mr. Lane's bold adaptation of the treatment. I only once saw transfusion of blood attempted, and that was for a case of pernicious anæmia under the care of Dr. Wilks. Notwithstanding the fact that it was tried under the most favourable circumstances, with all the necessary apparatus ready, with skilled help at hand, and plenty of time, yet through premature clotting and various other mishaps it ended in a complete failure, probably not one drop of blood reaching its destination. I remember I came to the conclusion at the time that transfusion was not an operation I should care to attempt in an emergency, even if I had the expensive apparatus required at hand.

I should think that, owing to the simplicity of Dr. Wooldridge's method, it should be given a fair trial, and in order that any general practitioner like myself may be able to avail himself of it in an emergency, I hope that Mr. Lane may find time on a future occasion to give us fuller particulars as to the method of carrying it out than he has afforded us in the account published in the last number of THE LANCET. It would be important to have fuller information regarding: (1) the apparatus required and mode of use; (2) the composition and temperature of the saline solution; (3) the time occupied in the injection—or, in other words, the rate at which it is safe to throw such a large volume as three pints and a half of fluid into the general circulation; (4) any hints which his experience may suggest.

I may add for the benefit of any old Guy's men in India, that it was Dr. Wooldridge's hope that his method might some day be applied to the "collapse" stage of cholera. He thought that the unfortunately transitory, though brilliant, results of intravenous injection of saline solutions in that disease were due to the effect not being kept up. His idea, therefore, was to have a large quantity of the solution hung over the patient's bed and allow a constant flow to run through the vein, the rate being regulated by the effects produced, and so keep up the volume of the blood and counteract the constant drain of its watery constituents through the intestines. It was his opinion that, at any rate, the patient would escape the risk of dying through his blood becoming inspissated. His first theory having been proved to be correct by Mr. Lane, it remains the privilege of some of your colonial readers who happen to have known Dr. Wooldridge and admire his genius, to show us that his second theory is as brilliant as his first.

I am, Sirs, yours faithfully,

FRANCIS HEATHERLEY, B.S., F.R.C.S.

New Ferry, Sept. 13th, 1891.

THE EASTERN HOSPITALS INQUIRY.

To the Editors of THE LANCET.

SIRS,—Referring to your leading article on the Eastern Hospitals Inquiry, amongst other matters you allude to the subject of disinfection, which has been employed there for a period of twenty years. During this time the bed linen &c. of over 25,000 patients have been washed, and a large number of persons, young and susceptible to infectious diseases, have been employed. The following are the diseases to which they have been exposed (small-pox excluded): typhus fever, enteric fever, scarlet fever, measles, diphtheria, and glanders; but with three exceptions, to be mentioned hereafter, no case of infectious disease has arisen during this long period amongst the laundry staff. One of the exceptions was the head laundress, whose business it was to visit the wards, and who possibly contracted it in this way or possibly elsewhere, not in the hospital at all. It is a mistake to suppose that all cases of infectious disease which "develop" in an infectious disease hospital "arise" there. The other two exceptions were the cases of two sisters, who were employed for two years at the soiled linen tub. They had been dealing during that time with the most infected of the linen &c. with complete immunity from infectious disease. At the end of that time, however, the brother of the young man of one of these sisters was admitted with enteric fever, and she visited him, soon after which she developed enteric fever. She was placed in an enteric ward, where she was visited by her sister, soon after which this other sister developed enteric fever. These three cases occurred about twelve years ago, since which time not a case of infectious disease has appeared amongst the laundry staff. Judging, then, of my method of disinfection by results, it is proved to be efficient. I have more than once called the attention of Dr. Bridges and of the many distinguished health officers and physicians who have from time to time visited the hospital from all parts of the world to the doubtful value of the current disinfectants, to the complete efficiency of this method, and to the fact that a valuable contribution had been made to medical science.

I am, Sirs, yours obediently,

Homerton, Sept. 14th, 1891. ALEX. COLLIE.

BURIAL OR CREMATION?

To the Editors of THE LANCET.

SIRS,—I would wish to supplement your admirable remarks in THE LANCET of Aug. 29th, p. 497, with a few suggestions of my own, the result of many years' study of the subject. Personally I am in favour of "earth to earth" burial as the means of disposal of the dead, but that cremation is the more perfect mode, speaking sanitarily, does not appear to me to admit of argument. I have therefore ever since the appearance of Sir Henry Thompson's celebrated paper in 1874, contended that those who prefer cremation as the mode in which their own bodies should be disposed of after death should have every facility for this being done. Extreme statements have been made by partisans on each side as to the objectionable features of burial and of cremation respectively. You have disposed of the former so effectually that I will merely add this remark. If burial were so dangerous as the cremationists urge, every village in which there is a churchyard or chapel-yard still in use ought to be a hotbed of disease, and this we know is not the fact. Where burials are few, in simple coffins and earthen graves, the ground will last for centuries without any detriment to the living. Burial, in the literal sense of the word, is really cremation underground; to condemn it is absurd.

But, on the other hand, the advocates of burial are equally absurd, it seems to me, in attempting to make so much capital out of what may be termed the medico-legal objection; for if every body is to be buried with a view to its being exhumed, farewell to burial reform. It would be an argument in favour of lead coffins, vaults, and all the mockeries of burial against which THE LANCET has inveighed so long. It is, however, capable of the *reductio ad absurdum* all round. Deaths occur daily in hundreds throughout the country of the perfectly natural cause of which there is not a shadow of a doubt. Again, it would be easy to name several poisons which could not by any chemical process be discovered, even soon after death and burial. What is required is an improvement in our death certification and registration system. Following an old and wise saying, let us take care of the pence—i.e., the ordinary cases of death—leaving the pounds—the extraordinary cases, requiring exhumation—to take care of themselves. As you have hinted, the two systems may be permitted to continue side by side; but as the principle of burial reform in its most important feature of "earth to earth" has been generally admitted, it seems to me that members of our profession, and especially medical officers of health, should do their utmost to suppress the following evils which still exist:—

1. Burials underneath cathedrals, churches, chapels, or buildings where people are assembled to worship. Those who order such entombments, for it is a mockery to term them burials, do so from thoughtlessness and under a mistaken notion of vested rights and the powers conferred by a "faculty." No faculty, whether granted by a clerical or legal chancellor, can confer the right to do an improper thing, and the Home Secretary has power to overrule any such faculty. Several City churches have been compulsorily closed in consequence of the effluvia arising from the human remains in the vaults beneath. And yet, in spite of this, the officials of another City church obtained a faculty to re-inter the remains removed from the churchyard into the crypts under the church. Such proceeding was strongly condemned in THE LANCET, and I have reason for believing that it was in consequence of this that the Home Secretary intervened and prohibited the proceeding. In another case—that of the Bebington Church, Cheshire—the combined action of the rector, churchwardens, medical officer of health, and parishioners prevented the granting of a faculty for burying a body in a vault beneath the church. But even if the faculty had been granted, the interment would, I feel sure, have been forbidden on application to the Home Office. It is too late in the day to make church vaults charnel houses,

and it is useless to talk of entombment in charcoal and concrete, stone slabs, and the best patent cement. All such interments ought to be absolutely forbidden, and the greatest honour which can be done to our greatest dead is to bury their remains in accordance with sanitary laws, the law of the land, and the words of the Order for the Burial of the Dead.

2. Vaults, catacombs, and "bricked" or "walled graves" belong to the past, and should now be all filled up and hermetically sealed. "Earth to earth" burial, as shown by a grave or grave plot, will with perishable coffins provide a family burying place which will last for centuries without infringing any law, and with perfect safety to the living. None know so well as members of our profession the various stages of disintegration in the body after death and burial, and how unseemly is the fight with nature when the body is enclosed in an imperishable coffin and laid in a vault. No one, in fact, defends it, and cemetery authorities would be perfectly justified in forbidding any but "earth to earth" burial. Much, however, may be done by influencing the public to do voluntarily what must otherwise be made compulsory.

3. And even when all the above premisses are admitted and a simple grave is used there still remains the coffin, a huge, massive structure of oak, or elm with handsomely French polished lid, sides, and ends, and shining brass plate, mountings, and handles. When shall we see the last of them? The "earth to earth" coffin of the London Necropolis is a step in the right direction, but it makes very slow progress in the provinces, whatever it may do in London. Those who like myself have seen a burial at sea will remember what a perfectly neat and satisfactory coffin the sailor's hammock makes, it consisting of a few yards of ship's canvas, neatly sewn. This, with internal layers of some disinfectant wool, would make a perfectly sufficient and perishable coffin, and would have the additional advantage of being economical. It would, moreover, be a return to the ancient practice of burying in woollens, which was the mode in general use before coffins came to be used, save in very exceptional cases.

The time for talking and writing is past, that for action has come. Time must elapse before cremation becomes frequent, still more before it becomes general, even if it ever should. Meanwhile there is excellent work to be done in the cause of burial reform as I have indicated. Let every one who reads this do his part in the good cause.

I am, Sirs, yours truly,

Liverpool, Sept. 11th, 1891. FRED. W. LOWNDES.

THE ETIOLOGY OF TUBERCULOSIS.

To the Editors of THE LANCET.

SIRS,—When I first ventured to predict that Koch's bold and disastrous assumption as to the nature of the parasitism of the tubercle bacillus would sooner or later be shown to be unsound it appeared extremely unlikely that it would be shown for a decade or two; and when I wrote the letter which appeared in THE LANCET of Dec. 27th, 1890, I little suspected that the production of the experimental proof of the unsoundness of the assumption in question would be recorded in THE LANCET a fortnight later.

Whatever etiologists may at the present moment suppose to be the value of the results of Sir Hugh's Beevor's research,—and so far there is no evidence that it is too highly estimated,—I take upon me to say that in determining that the tubercle bacillus will grow outside the animal body at ordinary temperatures in Europe[1] he has made the most important contribution to the etiology of tuberculosis that has been made since the discovery of the bacillus. It is not merely interesting academically, botanically, and biologically, it is of vital interest to the working sanitarian, and leads, or may lead, him straight to practical means for the prevention of a vast amount of tuberculosis. This will be apparent on reflection, but how long it may be before preventive methods based on the fact made known by Sir Hugh Beevor will be systematically carried out, is hard to say. The fact is at once seen, however, to dispose of the prevailing doctrine of the causation of tuberculosis, and consequently of the system of prevention which has come of it. Nothing can be clearer than that the determination of the saprophytism of the bacillus upsets the fundamental view upon which Koch relied for his dictum that tuberculosis is "an exquisitely infectious disease," and therefore throws down the entire fabric of nauseous and cruel restrictions that has been built up on the assumption of the strictly obligate parasitism of the bacillus. There can be no room for doubt about this. For not only did Koch lay it down absolutely in his historical address (1882) that *it followed* from his inability to cultivate the bacillus in his laboratory below 30° C. that it was a true parasite; but in his paper on "The Etiology of Tuberculosis" (1884) he wrote[2]:—"As a matter of fact, the conditions favourable to the development of the tubercle bacilli, especially a temperature of over 30° C., lasting day and night for weeks, do not exist together outside the animal body; hence *no view is possible but that the tubercle bacilli are limited in their existence entirely to the animal and human organism.* They are therefore true parasites, which *cannot live without their host*, not occasional parasites like the splenic fever bacilli, which ordinarily complete their developmental cycle outside the animal body, and only at times invade it..... the tubercle bacilli pass through *the whole cycle of their existence in the body*, and in no way need an open-air life to enable them to assume the 'resting' form necessary for the preservation of the race." (My italics.)

Sir H. Beevor's success in cultivating the bacillus at far lower temperatures than 30° C. shows that another "view" was "possible" in respect of the nature of the parasitism of the form, and that the objections I raised in my book[3] to Koch's arbitrary assertion on the point were valid. Moreover, it is now obvious that all the elaborate provisions for controlling or "dragooning" the phthisical in most of the countries of Europe (provisions which some etiologists are anxious to introduce into England) rest on an unsound assumption. As a matter of fact, the tuberculous class in those countries have for many years been coerced by stringent laws founded on an erroneous conclusion from incomplete or defective culture processes. This may, perhaps, account for the unproductiveness of the laws, and their unproductiveness may possibly explain the eager search in all directions for a cure for phthisis—work that would have been superfluous had the means employed to prevent the disease been effective. If, however, the advocates of the German system of prevention could show that it has not been barren of adequate results—if, for instance, they could show that in any one country in which compulsory prophylaxis (*re* tuberculosis) has prevailed since 1882, the relative mortality from tuberculosis has from that year diminished in a ratio with the diminution in the mortality from the disease in England during the same period, or indeed during an equal period ending in 1882 (before the illusory danger of "sputum dust" was thought of)—even then the strenuous advocates of the existing continental system would be under the necessity of evolving another principle for it, seeing that the obligate parasitism of the tubercle bacillus, the only ground on which it stood, has been cut from under it.

Sir Hugh Beevor's cultures and Koch's observations on the destructive action of the sun on the tubercle bacillus show that two of the four main deductions in my book[4] are sound. (1) The first and cardinal one is that the bacillus grows at ordinary temperatures outside the animal body, and is, therefore, in Koch's technology, an accidental or occasional, and not a true parasite. (2) That tuberculosis is mostly, and phthisis perhaps invariably, caused by the bacilli given off into the air from the growing vegetation (in its saprophytic stage), and not by the bacilli contained in discharges from the human or animal body, and disseminated in the shape described compendiously as "sputum dust." (3) That the saprophyte grows at the time when it invades (so as efficiently to infect) man, on certain (specified) soils in his dwelling—principally in the dormitory. (4) That direct sunlight rapidly kills the saprophytic vegetation, whilst exposure to a certain [unknown, and at present indeterminable] amount of chemical [solar or other] light inhibits its growth. Now that the first and the last of these deductions have been experimentally confirmed, the final recognition of the soundness of the others is well nigh matter of certainty. I do not ask for space, however, to go into my old arguments. They will stand or fall on their merits. But I would point to the enormous importance of the destructive action

[1] A determination, it will not be overlooked, vouched for by Dr. Crookshank

[2] New Sydenham Society (1886), p. 185.

[3] The Prevention of Consumption. [4] Ibid.

of light on the bacillus in the prevention of consumption. The now known power of the sun offers us a ready and practicable means for commencing at once the reduction of the sum of phthisis—by cure as well as by prevention. There is no occasion to wait for further research.

In his address to the Congress in Berlin in August last year Koch said: "The numerous researches as to the effect which heat, cold, drying, chemical substances, light, &c., have on the pathogenic bacteria which have no spores have yielded many results which may be used for prophylactic purposes. Among these factors light appears to me to be one of the most important." He then referred to his experiments with sunlight and daylight, but he omitted to indicate the precise way in which chemical light is to be "used for prophylactic purposes." He was about to disclose the discovery of tuberculin, and could not, it may be, delay over a side issue. In the last chapters of my book I entered into the somewhat complex question of the employment of sunlight in prevention. It is a wide and almost unworked field; but I will only observe here that, as I had reached the inference that the locality in which man is generally infected by the bacillus is the bedroom, and the further inference that chemical light, by killing the bacillus, is the main cause of the differentiation through which certain bedrooms in a house shall be infested with the vegetation, while other bedrooms in the house shall be free from it, it followed from these two premisses that the introduction of an amount of light into the infested bedrooms equal in chemical power to that let into the wholesome bedrooms would preclude the growth of the bacillus in them and make them consumption proof. It was a forced conclusion, too, from the premisses that man had inadvertently brought consumption on himself by unwittingly excluding a sufficiency of light from his bedroom, and that, consequently, the limitation of phthisis is or has been dependent on, or the sum of phthisis is or has been determined by, the number of under-sunned bedrooms in a community. As, however, the premisses were merely inferences from known data, and were unsupported by new facts, I was not unprepared to find that the speculative element in them had seemingly appeared to the critics to supersede the necessity for looking to their soundness or unsoundness. But now that the saprophytic life of the bacillus and the sun's inimical influence on its growth have been determined, it may not be held to be so wildly speculative to submit that the bedroom is the site of efficient infection, and that the sun has in all countries, in all ages, governed the incidence of consumption. Still, the view is too strong meat at present, perhaps, for easy assimilation. Fortunately the value of the application of light for prophylactic purposes does not turn on the question whether the bacillus grows or merely exists in bedrooms. The coming school of saprophytists may therefore meet the reigning school of parasitists on common ground without any sacrifice of principle. Koch has plainly indicated that the places in which the largest amount of sputum is presumably present are the places occupied by the phthisical. This simple inference, indeed, wants but little authoritative support. Therefore, passing over the somewhat vague reference to "pathogenic bacteria which have no spores," Koch's object and intent in suggesting the use of light prophylactically were, apparently, to kill the spores of the bacillus in sputum by flooding bedrooms and other places with sunlight and daylight. If this interpretation of his few words is the true one—and I see no other—his mode of prophylaxis is, in effect, my scheme of prevention. And as the difference in the principle upon which it is proposed to use sunlight is no bar to its use, preventive medicine has now a most potent means ready to hand for precluding a part, and not a small part, of the whole sum of phthisis.

Of course, light is only one means to the end; and where its use cannot well be had there are numerous agencies that will destroy the parasite (or keep down the saprophyte) in the bedroom, though none, perhaps, are so cheap, handy, and agreeable as the sun's chemical rays. Nothing thorough will be done, however, I suppose, in the way of stamping out phthisis until it shall be demonstrated that the dormitory is the great source of tuberculosis. The would-be curers of consumption will then see that their remedies should have been applied, not to the patient, but to the patient's bedroom—even though the procedure might have been open to the sarcasm that it was akin to anointing the weapon, instead of the wound, with the salve made with Sir Kenelm Digby's "sympathetic powder." It will further be seen how it is that the phthisical who have been cured or patched up away from home—at consumption hospitals, in the Engadine, during a sea voyage, by tuberculin, &c.—are almost invariably reinfected after a time on their return home. Nay, even now, if Koch were to seek for the explanation of the greater refractoriness to his cure and to the larger mortality from its employment in some institutions than in others, he might possibly find it in unsunned wards. To begin with, in Berlin there is La Charité, where, as Professor Virchow observes, the deaths after inoculation with tuberculin are relatively so numerous.[1] Are the wards for the inoculated so airy, light, and sunny there as to ensure that the sleepers in them do not inhale relays of living tubercle bacilli, to find lodgment on denuded surfaces and to start tuberculosis anew?

I am, Sirs, yours truly,

Melbourne, Victoria. C. CANDLER.

THE LUNACY LAW AMENDMENT ACT AND THE RECENT ACTION AT GUILDFORD.

To the Editors of THE LANCET.

SIRS,—It may appear somewhat out of place for me to agree to the suggestion of Dr. Sutherland, as contained in THE LANCET of Saturday last. Let me explain my reason for giving assent. Proposals were made that that action should be compromised by the payment of a comparatively small sum. I should have agreed to this in preference to suffering the annoyance which such an action as the one lately tried at Guildford (not Croydon) must entail. But in the mean time further assistance was obtained by the other side, and the compromise was refused, except at a much increased cost. The action therefore went on. If medical men as a body show that they will not allow a professional brother to be assailed as Dr. Dukes and I have been, lawyers will be more chary of taking up such cases, feeling sure that no compromise will be agreed to. I plead for Dr. Dukes, who has been much distressed by the whole circumstances of the case. Believe me to be, with thanks for your advocacy,

Yours truly,

ALFRED CARPENTER.

P.S.—If I had not been out of health I should have been delighted to have fought out the question in the interests of justice and of the profession.

Croydon, Sept. 15th, 1891.

ALPINE CLIMBING.

To the Editors of THE LANCET.

SIRS,—All of us who love the Alps ought to give thanks to your correspondent for his delightful article "Among the Higher Alps," which appeared in last Saturday's LANCET. The caution he imposes on would-be mountaineers is quite needed in view of the great opening out of mountaineering resorts in Switzerland within late years by rack-and-pinion railways. When at Zermatt this summer the opinion was frequently expressed that the newly opened railway to that place would, by bringing up numbers of raw novices, lead to many accidents. Your correspondent possibly fails to impress upon us that mere courage and endurance will not prevent accidents. Prudence is always essential, for most accidents have been due to want of this important quality, and many accidents have occurred from sheer thoughtlessness. Although, as mentioned, Alp climbing is a pursuit essentially for vigorous youth or early middle age, I have known men far on in life excellent mountaineers, and I recall particularly a Manchester merchant who never climbed a mountain until in his sixty-second year, and ascended the Matterhorn in his sixty-fifth, and is yet, when nearing seventy, still a climber. I would scarcely, as your correspondent does, place Monte Rosa among the mountains for experts only; it is a fatiguing mountain to climb, but until near the summit no danger can occur, and even then, unless the weather be unfavourable, the danger is not great. Your correspondent's remarks on clothing are very wise, and from my own experience I can fully endorse them; if too heavy or warm, part of the clothing can easily be carried until required. Guides generally have a knitted helmet, such as fishermen wear, to pull over their heads and necks in wind and snow, and excellent articles of clothing they are, and readily stowed away until wanted. The food question mentioned by your correspondent may be left to individual choice. When the

[1] THE LANCET, Feb. 28th, 1891, p. 506.

summit is gained I think one feels inclined for some solid food, and sandwiches, cold chicken, &c., are very grateful. Alcohol, I think, he rightly condemns, either before or during the ascent, for, although many climbers have told me they find it very beneficial, I have always considered that, while it numbed the sense of fatigue, it diminished muscle and brain power. Guides certainly are very fond of both wine and brandy on the expeditions, and usually, I believe, prefer white wines; but such fluids as cold tea seem to me preferable. Cold tea occasionally freezes when one is caught in a snowstorm, but one always would carry a little brandy as a reserve. Finally, your correspondent condemns drinking any fluid freely during a severe ascent. This is open to question. Many mountaineers take small quantities of water very frequently when climbing; at all events, so long as water is found.—I am, Sirs, your obedient servant,

G. ARMSTRONG ATKINSON.

Newcastle-on-Tyne, Sept. 14th, 1891.

THE LUNACY LAW AMENDMENT ACT AND THE RECENT ACTION AT CROYDON.

To the Editors of THE LANCET.

SIRS,—As a neighbour of Drs. Carpenter and Dukes, I addressed a letter to the *Norwood Review* on the above subject, on seeing a report of the case in that paper. My object in writing to the lay press had been to enlist the sympathy of the public in behalf of the two well-known senior practitioners who were the unfortunate medical defendants in the action, and avert, if possible, any public prejudice which the case might have created in the neighbourhood against them. I am glad to find now that the strong hand of Dr. Sutherland has taken up the matter, and trust that his suggestion to open a subscription list will be carried out. I may also add that my suggestion to transfer the responsibility of signing lunacy certificates to specially appointed experts was not intended as a low bow of deference to the specialist, or in any way to question the qualifications of the general practitioner, but as a protection simply from annoyances of this sort, which are exceedingly harassing to the hard-worked practitioner, but inevitable in the present unsatisfactory state of the lunacy laws. Had Dr. Sutherland quoted my words a little more fully this explanation from me would have been unnecessary.

I am, Sirs, your obedient servant,

J. A. AUSTIN, M.D.

West Norwood, S.E., Sept. 14th, 1891.

THE VENTILATION OF THE FRENCH AND ENGLISH HOUSES OF PARLIAMENT.

(FROM A CORRESPONDENT.)

SINCE the building of the Houses of Parliament considerable experience has been acquired and knowledge gained concerning the ventilation of public buildings. Doubtless if this legislative palace had to be constructed again better measures would be taken to secure good ventilation. Nevertheless, and considering that the science of ventilation was not so fully developed when the Houses of Parliament were constructed, English legislators may be congratulated on the good sanitary conditions they enjoy while attending to their duties in the House of Commons or in the House of Lords. The ventilation is not perfect, and there have been good reasons for improving the drainage; still, in both these respects, and in spite of the defects that still exist, the English Houses of Parliament have served as a model to other nations. Engineers from all parts of the world have been to Westminster, and, under the courteous guidance of Mr. Pim or the late Dr. John Percy, have visited and admired the means taken to ensure the ventilation of the Houses of Parliament. But, as the knowledge of sanitary science has increased, we have become more difficult to please, and now a demand for greater improvements has gone forth. A Select Committee has been appointed to report on the ventilation of the House of Commons. It has issued a report and suggested alterations, which it is estimated will cost £4725. The principal feature of these alterations will be to increase the size of the intake for fresh air by condemning eight rooms on the basement floor, now used for the storage of parliamentary papers. A more powerful air propeller is to be provided, and additional facilities for the admission of air into the House itself are to be obtained by making openings beneath the Members' and the Ladies' Galleries, so that the air may enter through fretwork at a higher level than at present. The ventilation of committee rooms is also to be rendered more effective.

By such measures additional comfort and health, it is confidently expected, will be secured; and even if the advantage of these proposed alterations does not prove as great as anticipated, members of Parliament will still work under, comparatively speaking, favourable conditions. If, however, we proceed from Westminster to the Quai d'Orsay we shall find a very different state of affairs. The members of the French National Assembly have indeed good cause of complaint, and they have not the same prospect of realising any very effective improvement. Simultaneously with the inquiry of the Select Committee on the Ventilation of the English House of Commons a Parliamentary Commission was appointed to examine the present arrangements of the French Chamber of Deputies. M. Emile Trélat was instructed to study technically the ventilation of the Parliament house. It would be difficult to find a more competent authority, and, most fortunately for this purpose, M. Trélat has been recently elected a member of the National Assembly by the fifth arrondissement or Latin quarter of Paris. He is one of the most active sanitary reformers of France. Needless to say, he was one of the most prominent among the French delegates who attended the International Congress of Hygiene recently held in London.

The report drawn up by M. Trélat on the ventilation of the French Chamber of Deputies is now before us, and constitutes a most interesting document, in which scientific facts are related in so easy and graceful a style that what would otherwise become dry reading is quite interesting even to the untechnical mind. The French Chamber of Deputies, which, as most visitors to Paris know, stands facing the bridge and Place de la Concorde, and is exactly *vis-à-vis* to the Madeleine Church,—was built towards the end of the Restoration, and so planned as to provide seats for 300 members of Parliament. But when Charles X. was driven from the throne, the number of deputies under Louis Philippe's constitutional *régime* was increased, and was nearly doubled under the Republic of 1848. Under the present Republic place has to be found for 578 seats, where formerly there had been but 300 comfortable arm-chairs. The surface of the House measures 467 square metres; thus there is but 80 centimetres square of space for each deputy. In the primary schools of France the minimum allowance of space per pupil is 1·25 metre, and this, whenever possible, is increased to 1·50 metre. The back of the deputy's seat is 51 centimetres wide; the little desk in front of him 46 centimetres wide, and only 25 centimetres deep. The desk is not big enough to hold the official documents &c. which a deputy generally has to carry about with him. Between the back of the seat and the front against which the deputies' knees rest the distance is only 85 centimetres. The effect of this limited space is graphically described by M. Trélat: "At the beginning of a sitting a deputy of average stoutness takes his place, and is at first fairly comfortable. The torso is to the right, the legs rest at right angles with the floor, and he is well balanced in his place. But as the sitting is prolonged, the deputy becomes ill at ease, his limbs begin to feel symptoms of numbness. The legs seek relief by alternately crossing one over the other. The body begins to sink and slide down into the seat; the knees project forwards. The centre of gravity has to be altered; the body has to discover a new equilibrium. It is necessary to change position, but this is not possible for want of space both in respect of length and width." This bodily suffering is intensified by the bad ventilation, and may account to some extent for the impatience and irritability which result in the outbreak of "scenes" that tend to degrade the dignity of Parliamentary institutions. A House of Parliament, M. Trélat insists, should be so constructed that every member can see and hear the speaker, and see the effect produced by a speech on his fellow members. Also, every member should be able to rise from his seat and go to any part of the House without disturbing other members or causing any noise. In the French Chambers additional seats have been placed to the extreme right and left, and here the speaker cannot be heard unless he turns especially round either to the right or

the left. The gangways are also choked up with seats. There are 200 seats which cannot be left without disturbing a neighbour, and fifty-six seats where two neighbours must be disturbed. Even if the deputies each enjoyed sufficient room to sit, listen, and study in comfort, there would still remain the difficulty of ventilation, which is more complicated than that of a theatre. In the latter the air is changed by the raising of the curtain and the intervals between the acts; also the performance does not last more than three hours. In Parliaments there are no intervals, and the sittings are of longer duration. The intake of air for the Chamber of Deputies is in a small garden on the side of the Boulevard St. Germain. A fan, worked by steam power, propels the air along a shaft divided into two branches. In one of these branches is placed the warming apparatus. The hot air and the fresh air unite in a third shaft which delivers the air at the summit of the Chamber of Deputies, and at a height varying from ten to twelve metres from the floor. In descending upon the members it brings back to them the ascending heated and vitiated air of their respiration and of the gas-burners.

The ventilating and warming apparatus is powerful enough to renew the air ten times in an hour, and to raise the temperature 50° to 60° C. When the House was empty M. Trélat changed the temperature from extreme cold to suffocating heat in a quarter of an hour. But when the deputies are seated the fans can only be worked very slowly, as otherwise the draughts would be insupportable. Experience shows that the stronger the draught the more necessary it is to increase the warmth of the air delivered. Thus, at the commencement of a sitting the members will stand, without complaining, a slow current of air at 15° C. But as the air becomes contaminated, the heat of the increasing current must be augmented. Thus, after two or three hours' sitting, the supply of fresh air has to be raised to 22° or 23° C. The currents of air are very noticeable and very varied. This is due to the irregular occupation of the Chamber. Where a group of deputies gather together there the heat increases, causing a strong up current of vitiated air. This is compensated by a violent in-rush of air in the parts of the House where there are fewer members. Thus, at one and the same moment some members complain of heat and oppression, others of cold and draughts. The Presidential chair is especially exposed to these inconveniences, particularly as the cold marble with which it is surrounded lowers the temperature of the contiguous atmosphere.

M. Trélat concludes his report by affirming that the Chamber of Deputies is much too small, and is therefore unhealthy. He urges that, in the face of this fundamental defect, no effective improvement is possible. Another and a larger Chamber must be built, and this could be done in the Court of Honour of the actual Palais Bourbon, or Parliament Buildings. The present Chamber could then be converted into a lobby and into offices. It would be a waste of time and of money to seek to ameliorate the actual installation. It will be seen therefore that the state of affairs in the French Chamber of Deputies is much more unfavourable than that of the English House of Commons. Mr. Herscher, the well-known sanitary engineer, who has accomplished so many important works in respect to ventilation, fully confirms M. Trélat's opinion, and the Parliamentary Commission condemns the system of ventilating by a downward current. Ventilation should assist the natural tendency of heated vitiated air to ascend. But there is not room in the French Chambers to collect, to warm, and mix the air below the floor, and then admit it into the Chamber by an upward draught. Therefore the Commission agrees with the experts, whose opinion has been taken, that there is nothing to be done to mend matters. A new Chamber will have to be built, and till this is achieved the deputies will undoubtedly suffer in health. The more assiduously they attend to their duties the more will they become susceptible to all illnesses engendered by a vitiated atmosphere.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Annual Licensing Sessions.

THE annual licensing sessions have in recent years attracted much attention. There is on the part of many of the more philanthropic sections of the public a desire to see the lower orders rescued from the thraldom of so many temptations to drink as is furnished by so overwhelming a number of licensed public-houses in their midst. That these are greatly in excess of the requirements of any but extreme drunkards cannot be denied, and any movement which has for its objects the diminution of intemperance deserves the warm approval of all those who see the terrible effects of drink in the form of disease and accidents.

Want of another Local Mortuary.

The want of a public mortuary in the Toxteth district has been painfully evident of late, two bodies in a very decomposed state having been carried by the police for a considerable time before a place could be found in which the remains could be deposited. It is very satisfactory to be able to state that the providing of a new mortuary is now only a question of time, the local authorities having resolved to avail themselves of the power conferred upon them by the Public Health Act, 1875, and to provide a suitable mortuary.

A Good Example.

"An old and truly grateful patient of the Royal Infirmary" has in this form, and desiring that her name should not be given, bequeathed to that charity the whole of her lifelong savings. A domestic servant for many years of her life, she had put away what she could, and by dint of accumulation, always sternly refusing to encroach upon the funds, she has now left no less a sum than £214 for the benefit of others who, like herself, may find themselves patients in the Royal Infirmary of Liverpool. It is a melancholy fact that even ordinary gratitude on the part of hospital patients is by no means universal; that which is gratuitously given is seldom appreciated, still more seldom valued. Such a splendid instance to the contrary is therefore well worth recording, and, as example is better than precept, it is to be hoped that this lesson in gratitude may be learned by at least some of those many who avail themselves of the benefits of hospitals.

An Incorrigible Woman.

A woman whose name, Bridget McCann, suggests her nationality was brought before the magistrate to-day for being drunk and riotous. It was her 264th appearance before a Liverpool magistrate on a similar charge, and medical evidence that she was suffering from chronic bronchitis was given. The magistrate sent her to gaol for four days in order that she might have the benefit of the attention of the prison doctor.

Deaths and Serious Injuries from Violence.

In this city, as elsewhere, crimes occur in rapid succession at intervals longer or shorter. Within the last few days a man has been fatally stabbed in the chest, and a girl aged sixteen has been seriously stabbed and only saved by a rib from death. The body of a boy, perfectly nude, was found in the water caused by the accumulation of rain in the cellar of a partly built house. At first it was supposed to be a case of accidental death from drowning, but it has now assumed a more serious aspect, two boys having admitted that they pushed him in for the sake of his clothes! These boys are respectively aged eight and nine! These are the more serious cases; but there are many others of a less degree.

Liverpool, Sept. 15th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Royal Infirmary.

THE plans for the proposed extension of the infirmary buildings have not yet been submitted to the subscribers for approval or otherwise, nor, in fact, has the proposal yet been formally submitted to them, although in the annual report the subject was referred to at some length. As a rule, however, the annual meeting is almost a formal matter, very few subscribers outside the governing body attending. One of the most formidable opponents to the scheme will be found in the Corporation, and at more than one recent meeting of the City Council no uncertain note has been sounded as to the intention of that body to strenuously oppose any further curtailment of the present open area in Piccadilly, though it is hard to see how they can interfere if the general body of subscribers are in favour of it. The finances of the infirmary are, as usual, most flourishing; on the last year's working a balance of

more than £4700 was reported on the ordinary income over expenditure, whilst no less than upwards of £10,000 in addition was received from legacies to add to invested funds. A revised code of rules for the management of the institution has been drawn up and adopted, with one exception. The one referred to had provided that each student upon entering for clinical work should pay a fee towards the infirmary funds; this means either that the student's fees must be increased, or else that the members of the medical staff must forego some portion of the fees which have hitherto been received by them for the clinical instruction to the students. This rule was eliminated for the time being, and the Board of Management and the staff are requested to confer, with a view to settle the question.

Deaths under Chloroform.

Whether the percentage of deaths under anæsthetics to administrations has increased the last few years, or not, may be a moot point, but there is no doubt that in this district the total has been greater of late. Since the death under the administration of methylene reported in THE LANCET, two more deaths under chloroform have occurred—one in the city on a patient aged sixty-two, undergoing operation for hæmorrhoids by one of our most experienced surgeons; the other at Blackburn Infirmary, where an amputation of the forearm in the person of a lad was in progress. In this latter case death appears, however, to have been caused by vomited matter entering the air passages.

Boards of Guardians and Matters Medical.

At several of our Boards of Guardians matters pertaining to their administration of medical relief have been somewhat prominent of late. At the Manchester Board a lively passage of arms was caused by one member reflecting in unmeasured terms on the way in which "the medical officers, to get rid of their responsibilities, ordered sick people into the workhouse." Indignant protests were sent from each of the medical officers concerned, and at the next meeting the gentleman who had thus criticised them apologised for what he had said, and admitted that the data and figures upon which he had founded his conclusions were all wrong. It is only just to say that the majority of the Board entirely repudiated the above gentleman's remarks, and a resolution was passed, "that the district medical officers have performed their duties, often under trying circumstances, to the entire satisfaction of the Board." At the Hope Hospital, belonging to the Salford Guardians, things have again been "breezy." One week the guardians passed a resolution that in future all candidates for any post at their hospital should be required to state their religious opinions. The next week, after a stormy discussion, this resolution was rescinded. At the same meeting complaints were made from the nursing staff that the quantity, quality, and cooking of their food was anything but satisfactory to them. It seems strange that matters of this sort cannot be arranged without always being thus brought before the public. The Chorlton Board of Guardians have recently made an innovation at their large infirmary at Withington by appointing a lady (Miss Porter) as assistant medical officer there. She has had hospital practice in London, and the board appear to have made the appointment as an experiment.

River Pollution.

Dr. Simpson, after many years' good work in the medical school and on the infirmary staff, has now directed his energies into another and no less useful channel. As a member of the City Council he shows how valuable the services of members of our profession may be in the municipal government of a large community. He has lately been calling attention to the urgent need for some resolute action in dealing with our open cloaca yclept the River Irwell, and which within two years will be the chief source of water-supply to the Manchester Ship Canal. Manchester is taking steps to put her own house in order, and Salford also is attempting to deal in a satisfactory manner with the sewage; but of the hundred and one offenders higher up the river extending many miles no such report is forthcoming. Surely if Manchester and Salford combined their forces something might soon be done to stop the pollution now going on. The Shelford local board have petitioned the County Council to interfere and use its powers, but County Council wheels grind very slowly; whether they grind surely is yet to be seen.

Manchester, Sept. 16th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

A Windfall for Charities.

The death of Miss Villers Wilkes on the 9th inst. set free the sum of about £100,000 left by the late Mr. Wilkes, her brother, to the General Hospital and the Midland Institute in equal shares. A curious rumour at one time circulated in the medical profession of the town with regard to one moiety of this amount. It was alleged that the deceased intended to leave the money to the then newly formed Medical Institute, but by an assumed clerical error it was written Midland Institute, the former place being hardly known. However this may have been, no one will grudge the receipt of this valuable gift by the large and important institution, which, in this industrial centre, does such substantial and varied benefit to the community. The accession of a similar amount by the General Hospital will come as a timely aid to the new building, and partly, it is to be hoped, to the endowment fund. Miss Wilkes was seventy-seven years of age. Her death was due to a strangulated femoral hernia, which was ably operated upon and reduced, but to the effects of which she succumbed thirty-two hours afterwards.

Our Future Water-supply.

This was the subject of an address by Mr. Councillor Barclay on the 7th inst. There was a large and appreciative audience, presided over by Sir Thomas Martineau. The substance of the lecture consisted largely of figures relative to the future supply and prospective growth of the city. The present supply was said to average 17,000,000 gallons a day, and it was estimated that in twenty-five years' time there would be required 11,000,000 gallons a day more. The Welsh source lately described by the Water Committee of the Town Council's report was illustrated by diagrams and its advantages pointed out, with an account of the characters of the water. The lecture will be an authoritative reference on this great question, and will no doubt afford much interesting information. The complaints as to the present supply and defects in the water have lately been frequent, and although the imaginative faculties have been called in as an aid to colouring statements, there is no doubt some amount of truth in the description of things seen, small and great, in the water of various taps which supply domestic dwellings.

The Causation and Spread of Epidemic Diseases.

Instruction by lectures is always a popular mode of conveying information, particularly if the lecturer is apt and the illustrations interesting. Dr. W. H. Line, at the request of the Midland Institute, gave an inaugural address on this subject on the 14th inst. The attendance was not so good as it should have been. The subject was ably dealt with, the difficulties, dangers, and measures for safety pointed out, and much valuable knowledge given. The subject does not commend itself to a large number of people, but nevertheless is of considerable importance in this densely populated area. Doubtless the teaching of sanitary knowledge in this form comes to be felt more irksome and dry in comparison with the many more exciting and interesting subjects so vigorously dealt with by general lecturers. Of these less attractive matters it may be said—

> "The tired mechanic at his lecture sighs,
> And which of the learned, with all his lore,
> Hath leisure to be wise."

Sept. 16th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The University of Durham College of Medicine.

IT is announced that the Medical College of the University of Durham, at Newcastle, is to be opened for the session on Oct. 1st, and that the Marquis of Londonderry will distribute the prizes and scholarships and address the students. The Right Hon. John Morley, M.P., the Mayor of Newcastle, and other prominent persons have promised to attend.

Tynemouth and the Infectious Diseases Act.

At a special meeting of the Borough of Tynemouth Town Council, acting as the urban sanitary authority for the

borough of Tynemouth, the Infectious Diseases (Prevention) Act of 1890 was adopted, and is to come into force on Oct. 14th next.

Hospital Saturday at Scarborough.

The usual Hospital Saturday collection has been observed at Scarborough. Numbers of ladies stood by the boxes, and the visitors contributed freely. More than £300 was thus collected. These Saturday collections are getting quite general in the northern counties, and, as well as the substantial aid rendered to the local medical charities, an increased interest, and sympathy with them is thereby created. It is not very long since working men rarely contributed, but now they are frequently governors, and many of the institutions are declared free, with the letter system abolished.

Sunderland.

The Sunderland Town Council have adopted the recommendation of their selection committee, who have advised the purchase of seventy-five acres of land at Ryhope, at a cost of £9000, for the erection of a new borough lunatic asylum.—A demonstration of Friendly Societies has taken place at Sunderland, under the auspices of the mayor and clergy of the town. Collections were made in aid of the Sunderland Infirmary, the Eye Infirmary, and the Monkwearmouth Hospital. A public meeting was held in the People's Palace, which was crowded in every part.

Dr. Mitchell of Barnard Castle has resigned his appointment of medical officer under the Teesdale Union, after a tenure of twenty-five years.

It may interest those of your readers who question extreme longevity to know that the vicar of Chillingham, who officiated at the funeral of the son of the Earl of Tankerville on Saturday last, will in a few months enter his one hundredth year, and that the rev. gentleman was distinctly heard by all who attended the service.

It is computed that there were 100,000 persons in the streets of Newcastle at the Trades Congress demonstration last Saturday, and there was no accident of any consequence.

Newcastle-upon-Tyne, Sept. 15th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Nursing in the Glasgow Royal Infirmary.

FOR some little time reports have been reaching the public that grave dissatisfaction exists in the nursing staff of the Royal Infirmary. The matters complained of are two: that the food supplied for the nurses is bad, badly cooked, and badly served; that the nurses are overworked, that their hours are too long, and that, as a necessary inference, the nursing staff is too small. It is stated that some are kept on duty for from fourteen to sixteen hours daily; one nurse is said to have been on duty for sixteen hours daily for nine consecutive days, another to have worked thirty-one and a half hours, with an interval of three and a half hours' rest. These charges are serious, and are made publicly by some of the nurses themselves, supported apparently by the entire resident staff of physicians and surgeons. The whole matter is being inquired into by a committee of managers, and it is stated that, as their report will be most exhaustive, it will not be issued for some time.

Glasgow University and Professor Helmholtz.

The principal and professors of the University have forwarded to Professor Helmholtz of Berlin an address congratulating him on the occasion of his completing his seventieth year. The address refers in eulogistic terms to the contributions made by Helmholtz to mathematics, physics, physiology, and æsthetics, and in particular to his famous works on vortex motion, electro-dynamics, physiological optics, and sensations of tone.

The Use of Tinned Peas.

A case of some importance has, in the meantime at any rate, been decided in the Sheriff's Court of Glasgow. A fruit merchant was charged, at the instance of the sanitary authorities, with having sold a tin of green peas which on analysis was found to contain 0·005 per cent. of copper, equivalent to 1·4 grain of sulphate of copper per pound of peas. In trying the case there was the usual unfortunate conflict of scientific evidence, Professors Charteris, Simpson, and Dalziel, and Dr. J. B. Russell giving evidence that such an amount of copper is injurious, while Professors Dougall, Glaister, and Barlow, and Drs. Sloan and Macphee, thought that 1·4 grain per pound of peas could hurt no one. All admit that the sulphate combines with the legumen of the peas and forms albuminoid of copper, which is insoluble and does not enter the system; but Professor Charteris and the witnesses for the prosecution think it is again dissolved by the acids of the stomach—at all events, to some extent,—while Professor Dougall and the witnesses for the defence think that is not so. Dr. Russell says the insoluble parts are indigestible and so injurious. Professor Dougall admits they would to some extent be indigestible, but to an immaterial degree. Professor Simpson has met with cases of chronic copper poisoning. Professor Dougall has had 40,000 patients through his hands and has not met with a case. Professor Dalziel felt colic and slight diarrhœa after two doses of sulphate of copper, and Dr. Russell has felt bad effects from green peas coloured with it. The witnesses for the defence and their families have used the peas and found no bad effects. The sheriff, in his interlocutor, passed most of this evidence by, and referred largely to text-books on materia medica and medical jurisprudence, and felt himself compelled to decide for the defendant. It thus becomes legal to sell peas with the above amount of green colouring matter. His lordship pointed out that by the third section of the Food and Drugs Act, 1875, "no person shall mix, colour, stain, or powder ..... any article of food with any ingredient or material so as to render the article injurious to health," &c. The colouring with copper sulphate in this case was acknowledged, but the plea was that the quantity is not injurious to health, and that was therefore the only question left for trial. The sheriff noted as an important fact that though sulphate of copper in large doses is poisonous, yet it has been used for greening peas for thirty-six years, the trade has reached 20,000,000 tins per annum, and no case of serious injury has yet been substantiated. It is understood that the sanitary authorities are not satisfied with the learned sheriff's decision, and intend carrying the case to a higher court. In reviewing the very interesting evidence given in this case it seems that at least two points were not pressed: That the combination of albumen and copper, though insoluble in water, is soluble in the gastro-intestinal juices, particularly the bile, and thus undoubtedly reaches the circulation; it is, in fact, in this way that even the salts of copper, which are soluble in water (the sulphate, for example), enter the blood. Then, again, the attention of the court was directed specially to the possible occurrence of acute copper poisoning; but the frequent use of "coppered" peas would give rise, not to diarrhœa, but to constipation. It is well known that in chronic diarrhœa, especially in the tropics, few astringents are of such value as sulphate of copper in small repeated doses; and it is used and valued by many practitioners in this country in the same capacity. The whole question is one of much interest, and worthy of a fuller investigation than it has yet received.

Post-graduate Session at Edinburgh.

The post-graduate session begins in Edinburgh on Monday, the 21st inst. A number of men have already intimated their intention to be present, and the session promises to be a successful one. Much attention has been devoted to making the courses of instruction thoroughly practical. The main danger lies in the wealth of choice provided and in the attempt on the part of those attending the course to do more than can be comfortably done in the limited time. The course lasts for three weeks, and the winter session opens immediately afterwards.

Visiting Physician to the City Hospital, Edinburgh.

It is reported that Dr. Allan Jamieson is to be succeeded by Dr. Muirhead as visiting physician to the City Hospital. Dr. Muirhead completes his term of office as an honorary physician to the Royal Infirmary in a few weeks; and, should he thereafter be appointed to the City Hospital, the selection would be a popular one, and it would keep him for some time longer connected with the teaching staff of the school. The hospital is used for clinical instruction in fevers.

Health of Edinburgh.

The mortality last week was 79, making the death-rate 16 per 1000. Diseases of the chest caused 20 deaths, and zymotic diseases 2. The intimations for the week comprised 6 cases of typhoid fever, 1 of diphtheria, 18 of scarlatina, and 4 of measles.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Irish Census, 1891.

IN the quarterly report for the second quarter of the year 1881 the Registrar-General pointed out how the death-rates were modified and how certain discrepancies had arisen owing to the method of estimating the population of Ireland which had been pursued up to that time. He showed how this method had resulted in an error of 134,597, or 2·6 per cent., as compared with the result of the Census; and stated that had a different method been pursued the error would not have exceeded 52,855, or 1 per cent. He announced that a more correct method would be followed in future. The population of Ireland on the night of April 5th, 1891, was, according to the preliminary abstract, 4,706,162, showing a decrease of 468,674 persons, or 9·1 per cent., as compared with the population in 1881. The estimated population to April 1st was 4,674,400, showing a discrepancy of 31,762, or 0·7 per cent. only; so that the rates for births, marriages, and deaths published for the total of Ireland from time to time during the past decade have been practically correct. A review of the populations of the large towns of Ireland, as enumerated on April 5th last, shows that for Dublin and Belfast the populations were understated in the quarterly and other reports, and therefore that the birth- and death-rates were over-estimated. In the remaining towns the recent census shows that as regards Londonderry, Lisburn, and Lurgan the numbers were under-stated, and as a consequence the various rates were over-estimated; while for Cork, Limerick, Waterford, Galway, Newry, Dundalk, Drogheda, Wexford, Kilkenny, Sligo, and Armagh the populations were overstated, and therefore the birth- and death-rates were under-estimated.

Mater Misericordiæ Hospital.

The report of this hospital, the largest general hospital in Dublin, for the past session is most satisfactory. It possesses 311 beds available for patients, and during last year 3613 intern patients were admitted, and nearly 27,000 were treated at the extern departments of the hospital. A training school for nurses has been formed, and private wards for medical and surgical cases have been provided; while the bacteriological laboratory founded last year is the first of the kind in any Irish hospital.

Central Criminal Lunatic Asylum, Dundrum.

When this institution was first established it was constructed to accommodate 120 inmates, and although it was enlarged during 1864, 1884, and 1887, yet the present accommodation is inadequate, for, calculated at 600 cubic feet per bed, it would allow of accommodation for 163 inmates; but the actual number of inmates on Dec. 31st last was 179. Being intended for criminal lunatics, the inmates have been convicted of theft, violent assaults, burglary, &c., while no less than 103 have been committed for murder. That ignorance and crime go hand in hand is shown by the fact that of the 179 inmates only 5 are well educated, while 72 can read and write indifferently, and 47 are altogether illiterate. As regards the social condition of the 179 patients, the married amounted to 39, the unmarried to 114, while 26 were widowed. This remarkable discrepancy between the married and unmarried, which constantly exists among Irish lunatics, has never been satisfactorily explained. His Excellency the Lord-Lieutenant some time since appointed a departmental committee to inquire into certain matters in connexion with the management of the asylum—viz.: 1. Classification and necessity for increased cellular accommodation; (2) general management; (3) departmental management and expenditure; and (4) reduction of population. As regards the first three subjects of inquiry, the committee have not yet terminated their investigations, but as regards the last-named, in accordance with the report, a number of cases no longer requiring detention in the asylum have been removed to their homes or to district asylums.

Ill-treatment of a Lunatic.

An investigation was recently held by the governors of the Omagh District Lunatic Asylum into an alleged case of ill-treatment towards a female inmate by two of the attendants. One of the attendants was dismissed, and the second called upon to resign, while the head nurse who directed the injured woman to be locked up in the store-room while the medical officer went his rounds was severely cautioned and fined £1.

Newspapers for Hospitals.

The guardians of the North Dublin Union, following the example set them by the authorities of the South Dublin Union, have erected a handsome pillar-box for the reception of periodicals &c. close to Sackville-street for the use of the hospital inmates.

Mr. Hamilton Burke, F.R.C.S.I. &c., late Medical Inspector

Mr. Burke, late senior medical inspector, Local Government Board, having retired, the North City Dispensary Committee have adopted a resolution expressing their sincere regret at the loss of his services, be by wise advice and prudent counsel having aided them in the general management of the dispensary.

Alleged Poisoning from Eating Tinned Salmon at Cork.

The Public Health Committee met on Tuesday to consider the report of Dr. Donovan, medical officer of health, as to the alleged cases of poisoning from eating tinned salmon. The report stated that three persons partook of some tinned salmon, and the next day they were seized with pains in the stomach and cramps, which continued for two or three days. There was no vomiting or diarrhœa, and the symptoms complained of were not altogether those that would be produced by eating unwholesome fish, so that most will agree with Dr. Donovan that not much importance need be attached to the matter.

The Lord-Lieutenant has approved of the expenditure of £4500 on the Armagh District Lunatic Asylum, and £150 on the Limerick Asylum.

Sept. 15th.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

Ozone, Physiologically and Therapeutically Considered.

MM. LABBÉ and OUDIN recently communicated to the Academy of Sciences some interesting observations on the action of ozone. This action is best observed when the subject is placed in conditions which approach as nearly as possible to the natural production of the gas. When prepared chemically the ozone is found to be always more or less impure; consequently for experimental purposes it is best prepared by the electrical method. This can be easily carried out by passing a current of air between two tubes across which the electrical discharge is made to pass. In this way an animal may be made to inhale air containing $\frac{1}{15}$ to $\frac{1}{19}$ of a milligramme of ozone per litre without the least inconvenience. When the blood of an animal, which averages usually from ten to eleven parts per 100 of oxyhæmoglobin, has been examined after the animal has been submitted to the inhalations for a quarter of an hour, an augmentation of 1 in 100 is found, and this is constant. On the other hand, when before the inhalations the amount of the oxyhæmoglobin is normal, a very feeble augmentation only is observed. This augmentation persists for from twelve to twenty-four hours; but if the inhalations be prolonged, the amount of oxyhæmoglobin will rise to the physiological limit. A highly interesting point is the observation recorded by the authors on the action of ozone on tubercular cultures. Two tubes containing these cultures were submitted to ozonic influence for some time, and then some of the fluid was injected into the cutaneous tissues of two guinea-pigs. Two other guinea-pigs were at the same time inoculated with another portion of the tubercular preparation which was not submitted to ozonic action. Now these latter animals succumbed to acute tuberculosis within twenty-five days, whereas the former two showed nothing abnormal as to their condition of health fifty days after the experiment. Ozone has, moreover, according to these observers, another therapeutic property hitherto little, if at all, noted, and which, in their opinion, may lead the way to some important clinical results—viz., its power of displacing and transporting the metallic substance of the electrode; and they found that this molecular displacement took place with all the metals.

The Physiology of the Liver.

According to M. Wertheimer, who made a communication on this subject to the Academy of Sciences at a recent meeting, the bile of the ox and sheep contains a special pigment, termed "cholohæmatin," which gives a characteristic

spectrum, and the injection of which into the blood current of the dog serves to demonstrate the fact established by Schiff, that the liver possesses the power of taking up biliary substances absorbed through the intestine or injected directly into the blood, and of rejecting them again in the product of its secretion. And as the bile pigments represent, according to Bouchard, the most toxic elements of the bile, it follows that the liver has the power of protecting the organism, not only against injurious substances introduced through the portal vein, but likewise through the general circulation.

Physical Examination in a Bath.

The physical examination of patients, the subjects of disease of the abdominal organs, while in a bath, is advocated by Dr. Chapowski as greatly facilitating the exploration of these organs in doubtful cases. The advantages he claims for this method are—(1) that the tension of the abdominal muscles is reduced to almost nothing; (2) the patient is able to change from one position to another much more easily; and (3) that where the abdomen is extremely painful to the touch the pain is greatly lessened. The author practises this mode of examination in cases of movable kidney, tumours of or around the spleen, different abdominal growths, exploration of the rectum, &c., and recommends its adoption in cases where from any cause the ordinary method is unsatisfactory from a diagnostic point of view as likely to lend considerable aid in arriving at a correct diagnosis.

Hospital Crisis at Marseilles.

What is termed an "incident" by the press occurred this week between La Commission Administrative and the resident medical officers of the Hospital of the Conception (900 beds) at Marseilles. It appears that some days ago one of the principal local papers, *Le Petit Marseillais*, recorded and commented somewhat severely on the fact that an old man extremely ill was refused admission by one of the resident medical staff, although the patient had a letter of admission marked "urgent." The house physicians and house surgeons collectively wrote a reply, setting forth that the case was refused admission for the want of sufficient accommodation, for lacking which the administrative authorities must be held responsible. The latter took umbrage at this epistle, and, exercising a little brief authority to the full, decided forthwith that the resident medical officers be deprived of their salaries for a period of three months and confined within the hospital gates for one calendar month—a somewhat school-boyish way of treating a responsible set of professional men of twenty-five to thirty years of age, it will be generally conceded. The latter, to show their independent single-mindedness, accepted the edict as to the money question, but demanded a revocation of the "confined to barracks" part of their sentence. This being refused, they all resigned in a body. The dressers and clinical assistants, sympathising with their comrades, have also resigned. But, as the working of the hospital cannot be satisfactorily carried on without a resident medical staff, the Commission Administrative threaten to revoke altogether the appointments, dismiss the resident staff, and elect others. That they have not already taken this step as hastily as the first appears to be due to the fact, well known to them, that no candidates are, or would be, forthcoming. In the meantime matters are at a crisis. The Prefect of the Department is intervening, and there is, according to the latest accounts, some talk of the Commission Administrative itself, not wishing to show the white feather, resigning as a body.

Paris, Sept. 15th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Effect of Alcohol on Children.

PROFESSOR DEMME of Berne has published a pamphlet on the Influence of Alcohol on Children. He proves by statistics that the abuse of alcohol by young people is frequent. This fact, he says, is due to extreme poverty and to the licentious habits widely prevalent among the lower classes. The impossibility of getting a sufficient quantity of good food drives poor folks to the brandy-bottle, of which the children naturally get their share. The bad example of the parents is, of course, followed by the children. But it is not among the poor alone that this evil exists; for many children of the comfortable classes alcohol in the form of beer and wine is a daily article of diet. The bad custom of letting children drink with their elders at table has become very general; nay, people take children with them to festive entertainments, and considerable quantities of alcohol are often consumed by them on journeys, Sunday and holiday excursions, &c. Parents often give their children alcohol in the honest belief that it is good for them. A great many people regard it as a tonic. Many mothers add some drops of cognac to their infants' milk, and the older they grow the larger the quantity. When they are ill alcohol is regarded as the best means of combating slight disturbances of nutrition, indigestion, &c., without sending for a doctor. These conceptions of the nutritive and therapeutic value of alcohol are quite erroneous. The excitement of the central nervous system by alcohol, which dispels weariness and seems to give new strength, is only temporary. Only coffee and tea can stimulate the powers of mind and body for a length of time. The main symptom of acute alcohol poisoning in children is abnormal excitement, ending, in extreme cases, in convulsions, and followed by mental and bodily debility of the nature of paralysis. These cases of drunkenness in children are fortunately still rare; the gradual destruction of the system by habitual excessive consumption of alcohol is much more frequent. Many of the frequent cases of chronic gastro-intestinal catarrh in children, followed by progressive emaciation and decay of strength, are traceable to this cause. The fatal disease of drunkard's liver has been observed in children. The abuse of alcohol also impairs the growth of children. But the most important disturbances of children's health from this cause are those of the nervous system. The fact that young people sometimes fall victims to the fashionable disease called "nervousness" is due in part to the early abuse of alcohol. More terrible, however, than all these physical evils, bad as they are, is the moral paralysis with which this vile habit smites its victims even in the springtime of life. Professor Demme has compared the children of ten drunkards with those of ten other families. Of fifty-seven of the former, twenty-five died in the first weeks and months of life of want of vitality or convulsions, six were idiots, in five a striking stunting of growth was observed, five suffered from epilepsy, one from severe chorea resulting in idiocy, and five had congenital malformations.

A Case of Culpable Homicide.

On the 9th inst. an apothecary was sentenced to four months' imprisonment for culpable homicide at Hirschberg, in Silesia. In making up powders ordered by a doctor for a little girl who had caught cold, he substituted morphia by mistake for calomel. After taking the first powder the child fell into a deep sleep, which its parents supposed to be natural. After the lapse of three hours the second powder was given, and the child's condition became alarming. The doctor was sent for, but all antidotes proved unavailing, and the child died. Each of the powders contained twenty-five milligrammes of morphia. The child's age was twenty-one months.

The Treatment of Diseases of Women in Dutch India.

Dr. Straatz, formerly assistant to the late Professor Schroeder in the Berlin Clinic for Women, has been invited by the Colonial Government of Dutch India to be the head of a clinic for women in Batavia, and has accepted the call. Hitherto there have been no specialists for the diseases of women in that country. The doctors shrank from performing operations, believing that the climate would render the regular healing of the wounds impossible. For this reason they were wont, if possible, to send patients of means who had to undergo operations to Europe. Dr. Straatz, who has been practising for some time in Batavia, has demonstrated that the apprehensions of the effect of the climate were quite unfounded. He has successfully performed a large number of internal operations.

The Chair of Hygiene at Marburg.

Dr. Löffler, professor of hygiene at Greifswald, has declined the call to fill the same chair at Marburg, which has now been offered to Professor Gärtner of Jena.

Death of Dr. Gustav Hahn.

Dr. Gustav Hahn, whose consulting practice is said to have been by far the largest in Berlin, though he was neither a professor nor a famous literary man, died here the other day. He received patients six or eight hours daily. Notwithstanding his great reputation, the fees he accepted were, as a rule, those of an ordinary Berlin practitioner. He enjoyed the absolute confidence of his patients,

and was famed for the kindness with which he invariably treated them. He took a keen interest in the proceedings of the medical societies, and not infrequently communicated observations which his great experience enabled him to make. He held high rank in the army, and was regimental doctor to the Emperor Alexander's Grenadiers, one of the crack regiments of the Prussian Guards. His age was fifty-seven.

Dr. Moos, private lecturer on otiatrics, has been appointed Honorary Professor at Heidelberg.

Two portraits of Virchow, by the famous Munich artist, Lenbach, are on show in Professor von Bergmann's residence, for members of the Medical Society, which will purchase one of them.

The course of instruction in games, the first of its kind in Berlin, was opened to-day. Sixty-eight teachers, who are in this case learners, were present.

The gardens round Koch's barracks are flourishing beautifully.

A new and cheap method of sterilising milk by heating it to a temperature of about 120° C., without detriment to taste, colour, or digestibility, is announced from Martinwaldan, near Kaiserswaldau. An apparatus in which 200 litres can be sterilised daily costs 1500 marks (shillings).

Berlin, Sept. 15th.

Medical News.

UNIVERSITY OF DURHAM.—The following candidates at the First Examination for the Degree of Bachelor in Medicine at the College of Medicine, Newcastle-on-Tyne, have satisfied the Examiners:—

Elementary Anatomy and Physiology, Chemistry, and Botany.—W. E. Alderson, Norman Bennett, Wm. A. T'Anson Charlton, Percival Davidson, Leopold Fothergill, Gilbert Gocher, Wm. T. Harkness, Thos. Horton, Harald Guthrie McAllum, William Wilkie Ridley, Tom Sanderson, Geo. William Scott, Leonard King Tickner, Percy Hugh Wardell-Johnson, all of the College of Medicine, Newcastle-on-Tyne.

Elementary Anatomy and Physiology.—Richard A. Mills-Roberts, College of Medicine, Newcastle-on-Tyne; Walter Geo. Parkinson, Yorkshire College, Leeds; Joseph Parker Woodhouse, University College, Liverpool.

Chemistry and Botany.—Chas. Harold Godwin Atkyns, Jas. Eder Harper, Chas. Holmes Joy, Frank Laughton-Smith, Frank Morris, E. P. Satchell, and G. Headley Tomlinson, all of Queen's College, Birmingham; Harry Bond, Harry Crichton, Geo. Wm. Harbottle, Alfred P. Lloyd, E. Tonge, T. Huddlestone Urwin, and W. Mott Whitehouse, all of the College of Medicine, Newcastle-on-Tyne; C. A. Brough, Edinburgh School of Medicine; Wm. Thos. Beddoes Donnelly, Gerardo Jimenez, Fred. William Rowland, Walter John Rowland, and Federico Zumbado, all of Guy's Hospital; H. Stagg Byers, E. W. Everett, Percy Lambert, and R. C. Jeremie Stevens, all of St. Bartholomew's Hospital; Alfred James Grant and Harold Huskinson, both of St. Thomas's Hospital; Edw. Walter Joscelyne, St. Mary's Hospital; Alfred Cornelius Leigh, University College, London; Bertie James Mayne, Middlesex Hospital; John Ralph Prior, King's College Hospital.

Chemistry.—George Elam, M.R.C.S. Eng., L.R.C.P. Lond., and Wm. Ernest Jones, M.R.C.S Eng., L.R.C.P. Lond., of Middlesex Hospital; Henry John Mathews, L.R.C.S., L.R.C.P. Irel., Royal College of Surgeons, Ireland; Edward Fredk. Pratt, L.R.C.P. Lond., Queen's College, Birmingham.

THE EMPRESS FREDERICK has opened a small model hospital at Cronburg, in the Taunus. It is to be maintained entirely at her own expense.

PRESENTATIONS.—Mr. M. A. Adams, F.R.C.S., M.R.C.S., of Maidstone, county analyst for Kent, and late President of the Society of Public Analysts, has been presented with a testimonial of the value of about £200 for his successful efforts in detecting the use of hop substitutes.—Mr. J. Thornton Duncan, F.R.C.P. Edin., M.R.C.S. Eng., has been presented "by a few grateful patients" with a handsome gold watch and travelling clock on his leaving Stamford, Lincolnshire.

SUNDERLAND INFIRMARY.—This institution continues its satisfactory and efficient career. The past year's report (the ninety-second) shows a considerable addition to the number of in-patients, whilst the total of out-patients remains about the same as the previous twelve months. Thirty-two patients were sent to convalescent homes at Harrogate and Whitley. The income from all sources was £10,352 12s. 9d., and the expenditure £7861 4s. 1d. The balance of debt on the general account referred to in last year's report has been extinguished by a generous response of the subscribers to an appeal for funds for that purpose. Satisfactory progress is being made in the erection of the isolation block, mortuary, and post mortem room.

MEDICAL MAGISTRATE.—Mr. J. B. Stuart, F.R.C.S. Edin., Standishgate House, Wigan, has been placed on the Commission of the Peace for the county borough of Wigan, Lancashire.

LONGEVITY IN IRELAND.—During the June quarter the deaths of ten centenarians were recorded. Of these, four were 100; one, 101; two, 102; one, 103; one, 105; and one 110 years respectively.

MEDICAL AND OTHER CHARITIES IN PORTSMOUTH.—At the instigation of the Mayor, a committee has been formed to establish an annual festival in Portsmouth to aid the funds of the medical and other charities of the town.

THE NEW CHIEF INSPECTOR OF FACTORIES.—The Home Secretary has appointed Mr. F. H. Whymper, Senior Superintending Inspector, to be Chief Inspector of Factories in place of Mr. Alexander Redgrave, C.B., whose retirement we noticed in our last issue.

THE Admiralty have arranged with the governing body of St. Bartholomew's Hospital, Chatham, for the treatment of workmen whose eyes are injured in the execution of their duty at Sheerness and Chatham Dockyards. An annual grant of £75 will be made to the hospital funds in return for this service.

PEREMPTORY CLOSING OF UNINHABITABLE HOUSES. At the instance of the Lambeth Vestry the Lambeth Police Magistrate, last week, made an order, under the Housing of the Working Classes Act, for closing fifteen houses unfit for habitation, in Glasshouse-street, Vauxhall, and authorised the Vestry to compensate the tenants upon removal, to the extent of £30.

THE SANITARY INSTITUTE, PARKES MUSEUM.—The list of lectures and demonstrations for sanitary officers, in continuation of the courses previously held by the Parkes Museum, has been issued, and it is proposed to repeat the course in London twice each year, to suit the requirements of persons preparing for the examinations of the Institute. The lectures will be given on Tuesdays and Fridays, at 8 P.M., in the Museum, 74A, Margaret-street, W.

SOCIETY OF APOTHECARIES OF LONDON.—The results of the examination in Arts qualifying for registration as medical student, held in the hall of the Society on the 4th and 5th instant, have just been published. There were 172 candidates, and from the pass list it appears that 4 were placed in the first class and 20 in the second class, and 65 were certified as having passed in some subjects, but not in all. The next examination will be held on Dec. 4th and 5th, and again on March 4th and 5th, 1892.

SEAMEN'S HOSPITAL SOCIETY.—The committee of the Seamen's Hospital Society have decided to open, on the 1st of next month, a new dispensary for sailors in the East India Dock-road, to meet the needs of the largely increasing number of seamen who are now congregating in this neighbourhood. Sailors attending the dispensary, and who require treatment as in-patients, will be transferred either to the Dreadnought Hospital at Greenwich or to the branch hospital in the Royal Albert Docks.

SUDDEN DEATH OF A NAVAL SURGEON.—The death of Surgeon Thomas Edward Cook, of Her Majesty's ship *Speedwell*, formed the subject of an adjourned inquiry on the 14th inst. The deceased was found unconscious at Plymouth in a carriage of the mail train from London, and succumbed a few hours later at the Royal Naval Hospital. The post-mortem examination showed that a strong dose of morphia had been taken, the analyst finding in the stomach sufficient to cause death. A verdict of death from an overdose of morphia was returned, there being no evidence to show how or when the drug was taken.

NOBLE'S (ISLE OF MAN) GENERAL HOSPITAL AND DISPENSARY.—The forty-first annual report of this institution shows a considerable increase in the extent to which both the hospital and dispensary are valued. The expenditure has advanced proportionately, and necessitates increased support. The audited accounts for the year ending June 30th, 1891, shows a balance due to the bank of £261 15s. 10d. The committee would also urge the subscribers themselves to visit and to induce their friends to visit the hospital, as they cannot but believe that a more full and personal knowledge of the work which is being done by the institution would lead to greatly increased aid being given.

CAXTON CONVALESCENT HOME.—An effort is being made to raise a convalescent home and sanatorium for the printing and allied trades. A site which appears altogether suitable has been chosen, under the advice of Dr. B. W. Richardson and Mr. Saxon Snell, F.R.I.B.A., at Swanage, and funds are needed, in addition to those already subscribed, to carry out the purpose. Conditions peculiar to the printing trade make the provision of such an institution as that proposed highly desirable.

POISONOUS FUNGI.—A few days ago a family of six persons, consisting of a man, his wife, and four children, from Grays, Essex, residing temporarily in hop huts at Selling, Kent, were poisoned by eating toadstools, and one case proved fatal. It appears that one of the children found what were taken to be mushrooms, which the mother cooked with some bacon. Shortly after the meal the entire family were seized with violent pains and retching. Dr. Alexander of Faversham was summoned, and he found that they were suffering from fungi poisoning, the supposed mushrooms which they had eaten being, in fact, toadstools. One of the children, a boy aged five years, died. The mother for some time was very ill, but the rest of the family recovered more rapidly.

FOOTBALL CASUALTIES.—A young man named William James Lebeter, aged twenty-two, whilst playing at football recently at Ilkston, suddenly exclaimed he had been charged in the stomach, dropped to the ground, and quickly expired. Medical testimony was, however, to the effect that death was due to syncope brought on by over-exertion at football.—A man named Archer, aged twenty-four, during a game at football at Somerby, near Grantham, was accidentally kicked on one of his legs and sustained a fracture in two places.—D. Sharp, the well-known "half-back" of the Vale of Leven, whilst playing in a match at Glasgow, fractured his collar-bone.—Arthur Bartley, the Flint football team goal-keeper, whilst playing centre forward and rushing with the ball through the goal posts, violently cannoned with another player and fell heavily upon his back, death supervening a few days afterwards from injuries to the spine.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at Midnight on September 15th, 1891.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other diseases.	Total.	
Eastern Hospital	159	51	..	67	..	277	442
North-Western Hospital	193	44	..	17	1	255	411
Western ,,	118	16	..	9	1	143	224
South-Western ,,	156	16	..	10	..	182	340
South-Eastern ,,	178	12	2	16	3	212	402
Northern ,,	206	31	..	23	..	260	480
Totals	1010	170	2	142	5	1329	2359

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.

BLUETT, JOHN, M.R.C.S., has been reappointed Medical Officer of Health for the Borough of Chesterfield.

COPLAND, A., M.B., C.M. Glasg., has been appointed Surgeon to the Jarrow Memorial Hospital, vice Leigh, resigned.

COX, W. J. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the Bradfield Union, and also for the Fifth Sanitary District of the Basingstoke Union, vice Davis, resigned.

DONALD, ARCHIBALD, M.B., C.M., D.P.H. Glasg., has been appointed Medical Officer for the Eastern (Newtown) District of the Parish, Paisley.

DRAPER, M. R., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer to the West Ward of the Borough of Luton.

EDMUNDSON, ST. LEGER J., L.R.C.S., L.K.Q.C.P. Irel., has been appointed Medical Officer to the Temoh Gold Mines.

FAIRBROTHER, J., M.D. Irel., has been appointed Medical Officer for the Sanitary District of Laughton.

FLOOD, CHAS., L.R.C.S. Irel., has been appointed Medical Officer for the Wiggenhall Sanitary District of the Downham Union.

GRAY, W. H., L.D.S., F.P.S. Glasg., has been appointed Dental Surgeon to the Glasgow Royal Infirmary.

JOHNSTON, JOHN SOMERVILLE, L.K.Q.C.P., L.R.C.S. Irel., has been appointed Medical Officer and Public Vaccinator for the Fifth District of the Newport Pagnell Union; also District Surgeon to the London and North-Western Railway Company.

JONES, M., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health, Aberystwith.

LOGIE, A. G. S., M.B., C.M. Edin., has been appointed Medical Officer for the Raglan Sanitary District of the Monmouth Union.

LOVE, JAS. K., M.D. Glasg., has been appointed Aural Surgeon to the Glasgow Royal Infirmary.

MONRO, T. K., M.B., C.M. Glasg., has been appointed Assistant Physician to the Glasgow Royal Infirmary.

MORRIS, W. J., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer for the Festiniog Union, vice Roberts, and Medical Officer for the Tremadoc and Workhouse District, Penrhyndeudraeth.

PENMAN, R. S., M.B., C.M. Glasg., has been appointed Medical Officer for the Parish of Erskine, Renfrewshire, vice Lewis.

PRINGLE, JAMES H., M.B., C.M. Edin., M.R.C.S., has been appointed Assistant Surgeon to the Glasgow Royal Infirmary.

RANDLE, J. M., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health for the Second Sanitary District of Plympton St. Mary Union.

SPURR, JAMES, M.R.C.S., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Lyme Regis District of the Axminster Union, vice D. O'Brien, deceased.

TEARE, JOHN, M.B., Ch.B. Vict., has been appointed Resident Medical Officer to the Lock Hospital of the Royal Infirmary, Liverpool.

THOMSON, D., M.D. Glasg., has been appointed Medical Officer to the East Ward of the Borough of Luton.

WEATHERBE, L. J., M.B., C.M. Edin., has been appointed House Surgeon to the Rotherham Hospital.

WYNNE, W. A. S., M.D. St. And., M.R.C.S., has been reappointed Medical Officer of Health to the Lowestoft Borough and Port, and Mutford and Lothingland Rural Sanitary Districts.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BOLTON INFIRMARY AND DISPENSARY.—Junior House Surgeon. Salary £100 per annum, increasing by £10 per annum to £150, with furnished apartments, board, and attendance.

BRADFORD FRIENDLY SOCIETIES' MEDICAL AID ASSOCIATION, Little Horton lane, Bradford.—Qualified out-door Assistant. Salary £120 per annum.

BURTON-ON-TRENT INFIRMARY.—House Surgeon. Salary £130 per annum, with a prospect of increase, and rooms in the Infirmary free; also coals and gas.

CHARING-CROSS HOSPITAL, Strand, W.C.—Surgical Registrar. Salary £40 per annum.

CHESHIRE COUNTY ASYLUM, Upton, near Chester.—Junior Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

CITY ASYLUM, Birmingham.—Junior Assistant Medical Officer and Pathologist. Salary commences at £80 per annum, with board and residence.

EASTERN COUNTIES' ASYLUM FOR IDIOTS, Colchester.—Resident Medical Attendant. Salary £100 per annum, with furnished apartments, board, and washing.

HEREFORD GENERAL INFIRMARY, Bridge-street, Hereford.—Resident Dispenser. Salary £50 per annum, with board and washing.

HOSPITAL FOR WOMEN (LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants in both Out-patient and In-patient Departments.

KING'S COLLEGE, London.—Demonstratorship of Bacteriology.

LEICESTER UNITED FRIENDLY SOCIETIES' MEDICAL ASSOCIATION, 114, High Cross-street, Leicester.—Second Medical Officer. Salary £200 per annum, with Midwifery fees.

MIDDLESEX HOSPITAL, W.—Pathologist and Curator of the Museum.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer. Salary £125 per annum, to be raised by five equal annual increments to £150 per annum, with furnished apartments in the Asylum, and board and washing free.

ROYAL FREE HOSPITAL, Gray's-inn-road.—Junior Resident Medical Officer for six months. No salary. Board and residence provided in the Hospital.

ROYAL INFIRMARY, Hull.—House Surgeon. Salary 100 guineas per annum, with board and furnished apartments.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road, S.E.—Assistant Surgeon.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Examiner in Dental Surgery.

WALSALL COTTAGE HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with board, lodging, and washing.

WEST KENT GENERAL HOSPITAL, Maidstone.—Honorary Dental Surgeon.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board and lodging provided.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Surgeon for six months. Board and lodging provided.

Births, Marriages, and Deaths.

BIRTHS.

CLARK.—On Sunday, Sept. 13th, 1891, at 78, Church-street, Lancaster the wife of Robert Clark, L.R.C.P. Edin., of a daughter.

CLARKSON.—On Sept. 9th, at Nasik, Bombay, the wife of Surgeon-Major Clarkson, of a daughter.

DYMOTT.—On Sept. 9th, at Monteith-road, Egmore, Madras, the wife of Surgeon D. F. Dymott, Indian Medical Service, of a daughter.

LAMPORT.—On Sept. 9th, at 14, Castle Park, Lancaster, the wife of H. C. Lamport, M.B., C.M., of a daughter.

LOWE.—On Sept. 10th, at Belmont, Bath, the wife of T. Pagan Lowe, M.R.C.S., of a daughter.

MILTON.—On Sept. 13th, at Killieser-avenue, Streatham-hill, the wife of Herbert Milton, M.R.C.S., of Kasr-el-Aini, Cairo, of a daughter.

SMITH.—On Sept. 12th, at Greenwich, the wife of W. Johnson Smith, F.R.C.S., of a son.

WHITE.—On Sept. 14th, at Coventry, the wife of F. Faulder White, F.R.C.S., of a son.

MARRIAGES.

ATKINS—NORMAN.—On Sept. 12th, at St. Michael's Parish Church, Devonport, by the Rev. W. Mantle, Sidney E. Atkins, Surgeon, to Emily, second daughter of John Norman, Esq., of Stoke Damerel, Devonshire, late of H.M. Army Pay Department.

BEACH—HADWEN.—On Sept. 10th, at the Parish Church, Lancaster, by the Rev. Canon Beach, M.A., Rector of North Fambridge, Essex (brother of the bridegroom), assisted by the Rev. J. J. Lewis, M.A., and the Rev. R. D. Bruce, B.A., Fletcher Beach, M.B., F.R.C.P. Lond., youngest son of the late Thomas Beach, Esq., of Bradpole, Dorset, to Emily Dora, second daughter of the late Henry Hadwen, Esq., of Ashfield, Lancaster.

CLAYTON—ROWLAND.—On Sept. 10th, at St. James's Church, Accrington, by the Rev. John Rogers, M.A., Vicar of the Parish, assisted by the Rev. J. P. Petty, M.A., James Simpson Clayton, M.B., C.M. Edin., eldest son of the late Richd. Clayton, M.R.C.S., L.R.C.P., Ewbank, Accrington, to Miranda (Minnie), only daughter of R. H. Rowland, Esq., J.P., The Bank, Accrington.

CORNISH—CORNISH.—On Sept. 12th, 1891, at St. Stephen's, Uxbridge-road, W., by the Rev. James Longridge, Vicar of St. Clement's, City-road, Edward Cornish, M.R.C.S. Eng., L.R.C.P. Lond., of 8, Rosebank, Walthamstow, son of the late Edward William Cornish, of Marazion, Cornwall, and Exeter, to Fanny, daughter of the late William Cornish, of Marazion.

FARMER—LAWSON.—On Sept. 10th, at Lewisham Parish Church, by the Hon. and Rev. Canon Legge, M.A., Bishop Elect of Lichfield, Ernest William White Farmer, M.D., M.R.C.S., to Emma Elizabeth, only daughter of Richard Durant Lawson, of Lewisham.

HICKEY—SMITH.—On Aug. 8th, at St. George's Church, Parkes, New South Wales, by the Rev. G. F. Neild, assisted by the Rev. R. S. Smith, brother of the bride, Lewis Hickey, M.D., son of Evan L. Hickey, of Chelsea, to Fanny, younger daughter of the late Capt. Frederick York Smith, of Kingsmear, Devon.

MACBRYAN—TRUMAN.—On Sept. 9th, at St. Albans, Acton-green, by the Rev. Allen T. Edwards, M.A. (cousin of the bride), assisted by the Rev. E. W. M. Morris, M.A., H. Crawford MacBryan, Medical Superintendent, The Brook Villa Asylum, West Derby, Liverpool, to Eveline Ada (Daisy), second daughter of M. R. Truman, Esq., of Bedford Park.

MARTIN—MACKINTOSH.—On Sept. 10th, at Strean Church, Newtownards, by the Rev. John Forbes, LL.D., assisted by the Rev. Professor W. Todd Martin, D.D., James Williamson Martin, M.D., F.R.C.P.E., Leith, to Sara Anne Christina, eldest daughter of Patrick Mackintosh, J.P., Ulster Bank, Newtownards.

WYNNE—SMITH.—On Sept. 10th, at Calverton Church, Notts, by the Rev. Canon Wynne, D.D., Professor of Pastoral Theology at Dublin University (father of the bridegroom), and the Rev. R. F. Smith, M.A., Minor Canon of Southwell (uncle of the bride), J. Darley Wynne, M.B., of Gregory Boulevard, Nottingham, to Lucy, youngest daughter of the Rev. T. Woollen Smith, M.A., Vicar of Calverton.

DEATHS.

BASSETT.—On Sept. 8th, at Steytlerville, near Uitenhage, Cape Colony, Henry Thurstan Bassett, M.B.Lond., late of Birmingham, aged 33 years.

DITCHFIELD.—On Sept. 16th, at Taviton-street, W.C., James Butterworth Ditchfield, M.D., aged 77.

EVANS.—On Sept. 9th, suddenly, at Commercial-road, London, E., Joshua William Evans, M.B.T.C.D., L.F.P.S. Glasg., aged 50.

JOLLIFFE.—On Sept. 12th, at Thorncliffe, Niton, Isle of Wight, John Jolliffe, Staff Surgeon R.N., second son of the late Col. W. Jolliffe, Royal Marines, in his 60th year.

KESTEVEN.—On Sept. 9th, at Boxhurst, Boxhill, Dorking, suddenly, William Bedford Kesteven, M.D. St. And., F.R.C.S. Eng., aged 79.

TAYLOR.—On Sept. 14th, at Torquay, Herbert Coupland Taylor, M.D., J.P., of Todmorden Hall, Lancs., and Quinta Rochedo, Madeira, son of the late James Taylor, of Todmorden Hall, Lancs., and Culverlands, Berks, J.P., aged 56. Requiescat in pace.

VORES.—On Sept. 15th, at Ealing, William Vores, M.D., late of Great Yarmouth, aged 79 years.

WILLIAMS.—On Sept. 14th, at Sherborne, Dorset, William Henry Williams, M.D., in his 73rd year.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

BOOKS ETC. RECEIVED.

ALLEN, E. W., Ave Maria-lane, London.
Seventh International Congress of Hygiene and Demography; Reports of the Meetings and Discussions held in London, 1891. pp. 194.

ALCAN, FÉLIX, Paris.
Congrès Français de Chirurgie. Cinquième Session. Paris, 1891. pp. 688.

ASH & CO., Southwark-street, London, S.E.
Abstract of the Transactions of the Hunterian Society, Session 1890—91. pp. 159.

BAILLIÈRE, TINDALL, & COX, King William-street, Strand.
Practical Manual of Diseases of Women, and Uterine Therapeutics. By H. Macnaughton Jones, M.D., F.R.C.S. Fifth Edition. 1891. pp. 704.

CHURCHILL, J. & A., New Burlington-street, London.
The Operations of Surgery. By W. H. A. Jacobson, M.B. Oxon., F.R.C.S. Second Edition. Illustrated. 1891. pp. 1224.
The Practice of Medicine. By M. Charteris, M.D. Sixth Edition. 1891. pp. 680.

CONSTABLE, T. & A., Edinburgh.
Atlas of Clinical Medicine. By Byrom Bramwell, M.D., F.R.C.P., F.R.S. Edin. Vol. I. Part II. 1891.

CORNISH, J. E., St. Ann's-square, Manchester, and SMITH, ELDER, & Co., Waterloo-place, London.
The Frog: an Introduction to Anatomy, Histology, and Embryology. By A. M. Marshall, M.D., D.Sc. Fourth Edition. Illustrated. 1891. pp. 163.

EYRE & SPOTTISWOODE, Great New-street, London, E.C.
Special and Atomic Energy. By Fredk. Major. Part III.: Heat. 1891. pp. 505. Price 7s. 6d.

LEWIS, H. K., Gower-street, London.
Illustrated Lectures on Ambulance Work. By R. L. Roberts, M.D. Lond., D.P.H. Camb. Fourth Edition, with Illustrations. 1891. pp. 206.

PHILIP, G., & SON, 32, Fleet-street, London.
The Seaman's Medical Guide. By A. Finlay, L.F.P. & S. Glasg. New Edition. 1891. pp. 181.

THE IMPERIAL PRESS, Bombay.
The Practitioner's Vade Mecum. By Dr. E. Cawasjee. First Edition 1891. pp. 1376.

THACKER, W., & CO., 87, Newgate-street, London.
Veterinary Notes for Horse Owners. By M. Horace Hayes, F.R.C.V.S. Illustrated. Fourth Edition. 1891. pp. 618.

WRIGHT, J., & CO., Bristol; and SIMPKIN, MARSHALL, & CO., London.
The Practice of Hypnotic Suggestion. By G. C. Kingsbury, M.A., M.D. Dub. 1891. pp. 206.

Grant College Medical Society: Annual Address, delivered February, 1891, by Dr. J. C. Lisboa, President (A. P. Cortez & Co. Bombay, 1891).—City of Manchester Quarterly Health Return; second quarter, July, 1891 (H. Blacklock & Co., Manchester).—University Medical Magazine, Pennsylvania, September, 1891 (University of Pennsylvania Press, Philadelphia).—The Birmingham Medical Review, September, 1891 (J. & A. Churchill, London; and Hall & English, Birmingham).—The Dublin Journal of Medical Science; edited by J. W. Moore, M.D. Dub.: Third Series, September, 1891 (Fannin & Co., Dublin)—Twenty-first Annual Report on the Operations of the Sanitary Department of the City of Glasgow for the year 1890; by P. Fyfe, Sanitary Inspector (R. Anderson, Glasgow). — The Official Gazette of the United States Patent Office, September, 1891 (Government Printing Office, Washington, 1891).—Laïcisation de l'Assistance Publique; par Dr. Bourneville (V. Coupy et Jourdan, Paris).—Jahresbericht über das Militär-Sanitätswesens für 1890; von Dr. Wilhelm Roth; XVI. Jahrgang (Ernst Siegfried, Mittler, und Sohn, Berlin, 1891). — The Climatologist; edited by J. M. Keating, M.D., F. A. Packard, M.D., and C. F. Gardner, M.D. — The Post-graduate, New York Post-graduate Medical School, August, 1891 (published at 226, East 20th street, New York City).—Tableaux d'Accouchements; par Drs. L. Soudée et E. Poussié (Octave Doin, Paris, 1890).—Zur Therapie bei Albuminurie und Nephritis der Schwangeren; von Dr. A. Mynlieff (L. Heuser, Berlin, 1891).—The British Guiana Medical Annual and Hospital Reports; edited by J. S. Wallbridge, M.R.C.S., and E. D. Rowland, M.B. Edin. (Baldwin & Co., Georgetown, Demerara, 1891); price 5s. — Aix-la-Chapelle: Ville d'Eaux (Rudolf Barth, Aix-la-Chapelle, 1891).—Reports of Medical Officers of Health, Warwickshire: Dr. Rostock Hill's Summary, June, 1891. — Calendar of St. Mungo's College for the year 1891-92 (J. Macnab, Glasgow, 1891). — Second Report of the Superintendent of the Johns Hopkins Hospital for the year 1891 (The Johns Hopkins Press, Baltimore, 1891). — Neglected Children in our Towns and Cities; by Wm. Mitchell (Bell & Bain, Glasgow, 1891). — Homœopathy; its Principles and Law treated from the Scientific point of view; by Dr. Jos. Drzewiecki, Warsaw, Poland.—Synopsis of the Lives of Victoria C. Woodhull, and Tennessee Claflin: the two first Lady Bankers and Reformers of America; by G. S. Darewin (J. H. Carthery, London, 1891). — Baden-Baden as a Watering-place; by Dr. A. Frey: translated by Dr. W. H. Gilbert; with two illustrations (F. Spies, Baden-Baden, 1891). — Income-Tax Assessments: Practical Guide; by Jas. Rhodes, Chartered Accountant: revised edition (Simpkin, Marshall, & Co., London); price 1s. net.—Étude sur la Mortalité Infantile en Belgique; par Dr. Schrevens (F. Hayes, Bruxelles, 1891).

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Sept. 17th, 1891.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Sept. 11	30·15	E.	64	60	117	81	59	..	Foggy
,, 12	30·12	S.E.	63	60	113	82	57	..	Foggy
,, 13	29·85	E.	64	60	115	82	58	..	Fine
,, 14	29·72	S.W.	67	63	94	70	62	..	Raining
,, 15	30·15	N.W.	56	52	100	65	49	·21	Fine
,, 16	30·33	N.W.	52	49	81	65	47	·02	Overcast
,, 17	30·13	W.	59	56	97	66	51	..	Hazy

Medical Diary for the ensuing Week.

Monday, September 21.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M., and on Tuesday, Wednesday, Friday, and Saturday at the same hour.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.

Tuesday, September 22.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electrotherapeutics, same day, 2 P.M.

Wednesday, September 23.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

Thursday, September 24.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

Friday, September 25.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.

Saturday, September 26.

MIDDLESEX HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

THE RECENT ACTION AT GUILDFORD.

In this case the defendants, Drs. Carpenter and Dukes, although the verdict was in their favour, have, as our readers are aware, had, through the impecuniosity of the plaintiff, to defray the cost of the action. It has therefore been suggested that this burden should not be allowed to fall solely upon Drs. Carpenter and Dukes, and that it would be but just and considerate that a subscription should be raised to lighten it. For this purpose an esteemed correspondent has forwarded to us a cheque for £2 2s., and we shall be very willing to receive other donations in furtherance of the object.

H. W. Gardner, M.B.—The regulations on the subject are very clear. When an officer is sick, and in the opinion of the medical officer in attendance requires change of climate for the recovery of his health, application is made for a medical board, which generally consists of a president and two members. They consider the case, and forward their recommendations to the local authorities, who almost invariably carry them out. Provision is made for emergent cases in which delay might prove injurious. The responsibility of saying what should be done rests with the medical officer in charge of the patient and with those composing the medical board, after reading an account of, and personally examining, the case for themselves.

Mr. H. W. Thorpe-Davies-Wood.—The paragraph is unsuited to our columns.

THE MEDICAL TOUT.

To the Editors of THE LANCET.

SIRS,—On a busy morning in July last a card bearing the name of "Dr. Perry, Euston-square," was brought to me, and I saw him promptly, presuming him to be a medical man. When shown into my room he produced a large leather bag, and was about to open it, when finding that he was a medical tout, I promptly showed him the door, and went on with my patients. Later on my servant brought me another of Dr. Perry's cards, with a most offensive and threatening message on its back, which I consigned to the waste-paper basket. The following letters will explain themselves.

I am, Sirs, yours truly,

Cavendish-square, Sept. 16th, 1891. CHRISTOPHER HEATH.

"London, Aug. 19th, 1891.

"Dear Sir,—Referring to the recent occasion, when our Dr. Perry took the liberty of calling at your office, will say that had you allowed Dr. Perry an opportunity to explain you would have found that he was not there for the purpose of importuning you in any way. Fact is, our representative never meets with such a reception as you felt it incumbent to accord him from any physician acquainted with the business policy of Messrs. ——. It is quite evident that you are unacquainted with the policy that governs all the actions of Messrs. ——. Aside from a commercial sense they are too well known to require any comment on my part, and in time I trust that you will be willing to grant us the same credit already extended to us by many of the most prominent members of your profession.

"We remain, very truly yours,

"(Dictated.) —— —— (Manager, Messrs. ——).

"Dr. C. Heath, 36, Cavendish-square, W."

"36, Cavendish-square, Sept. 15th, 1891.

"Sir,—On my return to town I find your letter of Aug. 19th. You are evidently unaware that Dr. Perry sent me a most offensive and insulting message on the back of one of his cards after I had declined to give up valuable time to him; and you must allow me to say that I consider that his call as your representative does not justify his using a professional visiting card, or his reception as a professional brother by

"Yours obediently,

"CHRISTOPHER HEATH.

SUBURBAN GARDENS.

IN the October part of *Good Words* Dr. Charles Chapman protests against the rearing of forest trees in suburban gardens. Light and air, he holds, are thus withheld unduly from the home, to the detriment of the health and comfort of its inmates. Of course, much of the force of this contention depends upon the extent of the garden, which even in connexion with suburban residences is sometimes not small. Still, the matter is certainly worthy of consideration by all whom it may concern.

Filter.—There are so many filters adapted for the purpose our correspondent requires, all of more or less excellence, that it is difficult to commend one kind more than another. Filtering media which are most in favour now are spongy iron, manganous carbon, silica-iron, coke, porcelain, kieselguhr, &c. A good filter should admit of easy cleaning at intervals, and be so constructed as to secure thorough impregnation of the water with air. Coke is an excellent medium, and a very efficient and cheap filter may be made by filling a cask provided with a false bottom with three layers of alternate coarse and fine pieces of coke. It is necessary, however, before using to allow a large quantity of water to run through the coke, so as to remove loose particles and tarry matter.

"PROVIDENT MEDICAL ASSOCIATIONS."

To the Editors of THE LANCET.

SIRS,—As one of the medical men referred to, I would like to make a few remarks in regard to Mr. Lathbury's letter in your last issue under the above heading.

In the first place, the institution with which Mr. Lathbury is connected is one of the Friendly Societies' Medical Institutes; and when I have stated how it has been formed and carried on so far, I am sure the right-thinking amongst the medical profession will agree with me that the provident principle is greatly abused. Owing to the fact that in the Oddfellows' and Foresters' Societies of Dunstable there were several prominent tradesmen, persons of independent means, &c., who obtained their medical attendance for 4*s.* per annum, my professional brethren in the town and myself sent a conjoint letter to the respective secretaries objecting to attend persons of this class for so small a sum, and our attempt at elevating the profession ended in the formation of this Medical Association, our dismissal, and the appointment of Mr. Lathbury. Circulars (to be filled in with the names and number of those wishing to join) were left at every house in the town, stating that persons over fourteen years of age would be attended for 4*s.* per annum, those under fourteen years of age for 2*s.* per annum, and persons who could afford it were to contribute 5*s.* and upwards, these circulars being subsequently called for by the touts of the societies. Mr. Lathbury has a board outside his residence with the tariff in large letters, also stating that payments can be made monthly, so that for twopence a child under fourteen can at once secure Mr. Lathbury's services for one month. Cards for medical attendance at a cheap rate have been issued to justices of the peace, county councillors, ex-mayors, aldermen, prosperous tradesmen, and others, all of whom are well able to pay the ordinary fee for medical attendance. Mr. Lathbury must know all this, and I leave it to him to justify it. In a sense I am sorry for him; he is in the hands of a committee who will use his services simply for their own ends, a conclusion I am sure he will soon arrive at. I have no doubt there are several medical men whose experience of these medical associations will go to prove how they are abused, and I am afraid that, until the profession is more united and a of her view of things taken, these abuses will still continue.

I am, Sirs, yours faithfully,

Dunstable, Sept. 15th, 1891. FIAT LUX.

P.S.—This letter is written at the wish of, and with the approval of, my medical *confrères* in the town.

To the Editors of THE LANCET.

SIRS,—I do not think Mr. C. W. Lathbury can complain of the treatment he receives at the hands of his brother practitioners when he knows (or soon will know) that the object of such associations as the one he is attached to is to tout, by local advertisements and otherwise, for patients of all classes, and admit them to the benefits of the charity—nay, not "charity" from their point of view—on payment of some four shillings a year. Nothing pleases such a committee better than numbers, and the more people they can get to join their "club" the more they want, until, as in some cases, the whole village is converted into one gigantic club, worked by one, or at most two, medical men, to the utter exclusion of the original practitioners. This condition has, I believe, actually been brought about in certain villages and townlets; and in all cases it is the *summum bonum* of the local committee, which is usually composed of working men, with a sprinkling of the middle-class tradesmen and shopkeepers. It is those very men who constitute the whole difficulty; for if the medical officer attempts to fix a wage limit it at once brings these committeemen within the pale of its application, and as a consequence the doctor is "sat on," and if necessary dismissed. You cannot serve God and mammon; neither can you serve your committee and at the same time deal honourably with your medical *confrères*. I have tried it. *Verbum sap.*

I am, Sirs, your obedient servant,

September, 1891. FESTINA LENTE.

ADVERTISING CARDS.

THE following card is said to have been distributed from house to house in Loughborough and other villages about Leicester. A practitioner is allowed by private and non-advertising methods to announce a change of address. But to take advantage of such a change to circulate a tariff promiscuously is, we need scarcely say, a very questionable procedure.

"Consulting Hours:—9 to 11, 2 to 3, and 6 to 8. Dr. Dickson, Physician and Surgeon. Removed to 215, Belgrave Gate, Leicester. Dr. Dickson informs his Country Patients that he has removed to larger and more convenient premises at 215, Belgrave Gate, Leicester, next door to the 'Holly Bush' Hotel. Consulting Hours: Morning, 9 to 11; afternoon, 2 to 3; evening, 6 to 8. Fees for Advice and Medicine, Adults, 5*s.* per week, Children, 4*s.* per week. Country Patients visited at the rate of 1*s.* a mile (Medicines included)."

Mr. J. T. Hislop (Tavistock).—The author chooses his own description, which we leave unaltered.

LOCUM TENENTES AND GENERAL PRACTITIONERS.

To the Editors of THE LANCET.

SIRS,—There can be no doubt that those gentlemen who, on entering the profession, are able and willing to devote some of their time, before settling down into practice, to taking charge for the more busy practitioners who are desirous of getting a short and hard-earned holiday, are doing a good and useful work. They not only confer a benefit on the practitioners whom they thus release for a time from toil for a much-needed rest, but also gain great advantage to themselves. There can be no better experience for a young man at the outset of his career than is afforded him by having temporary charge of another man's patients. But it should be thoroughly understood that any gentleman undertaking to act for another in this way is morally bound to carry out any engagements which have been entered into by him, and to permit nothing, save unavoidable circumstances, such as illness or domestic calamity, to interfere with the due performance of his part of the contract. Of course the same moral law applies equally to the other side.

As a case in point, the writer engaged one of these gentlemen about a month ago (Aug. 1st) to take charge of his practice from the middle of the current month. A note just received coolly informs me that he has made other arrangements, and will not be able to carry out his engagement with me. Of course this puts me to great inconvenience in many ways, upsetting arrangements made, besides giving me the trouble of seeking another gentleman to supply my place,—not easily found, as I am informed the demand for "locums" is just now far in excess of the supply. No doubt something may be said on the other side; indeed, this gentleman tells me, in answer to my remonstrance for his treatment of me, that "he has been put off himself with much less notice and little ceremony." If such cases occur often, there is sufficient reason for calling attention to the matter.

I am, Sirs, your obedient servant,

Sept. 9th, 1891. SENEX.

To the Editors of THE LANCET.

SIRS,—Is it not a pity that the use of the term "Locum Tenens" did not remain limited to parsons and others who have at least the rudiments of a liberal education? The following is a specimen of a frequent misapplication of the term ("Locum Tenens" for Locum Tenency): "Locum Tenens desired by M.B., C.M." The prevalent use of the word "Locum," as applied to a person who fills an office *pro tem.*, is a sign of the utter absence of classical propriety in the profession, and seems to recall the good old days of Benjamin Allen and Bob Sawyer. "My Tenens" would have been as easy to pronounce and unobjectionable. The future historian of the profession will laugh at our troubles with regard to classical difficulties, and will not fail to notice that in advertisements the singular number, locum tenens, is made to serve also for the plural: "Locum Tenens and Assistants introduced on the shortest notice." The future historian will discover that medical agents of this period were a shrewd race, and that they evinced their shrewdness in avoiding the term "Locum tenentes," as it might not have been understood by the profession.

I am, Sirs, your obedient servant,

Sept. 12th, 1891. L. T.

SWALLOWING HORSE-BEANS.

To the Editors of THE LANCET.

SIRS,—Perhaps this case may be of some interest. A boy aged four years swallowed on August 10th a large number of horse-beans. He passed two or three on the 13th, and on the 15th he was brought to me. I gave him olive oil internally; he then passed some more beans with great pain. I was sent for on the 22nd; I injected olive oil per rectum with a glycerine syringe, and that day he passed sixty without any pain. The boy's mother continued the injections, with the result that there were altogether 113 beans passed; they were all passed whole, and only one burst afterwards; they were very much swollen, and could be distinctly felt through the coats of the stomach. The boy is now quite well. I may add that I of course kept him on an almost fluid diet, and for a week there was no motion, nor were the beans after passing stained by bile. When they were all voided the motions came naturally.—I am, Sirs, yours faithfully,

F. HONE MOORE, L.R.C.S., L.R.C.P.I., &c.

Littleport, Sept. 14th, 1891.

"THE TITLE OF F.R.C.S."

To the Editors of THE LANCET.

SIRS,—Permit me to reply briefly to a letter from "M.D." on the above subject in your issue of to-day. "M.D." brings grave charges against professional men—charges which, I venture to state, are unreasonable, unjust, and will not bear the light of investigation. "M.D" says that for a man who holds the F.R.C.S Edin. or F.R.C.S.I. to write himself F.R.C.S. is morally wrong and illegal. By so doing he deceives the public, besides disparaging the professional status of men who hold the F.R.C.S. Eng. Let us look at the legal aspect of the question first. These three Colleges exist by virtue of Royal Charters granted as follows: R.C.S. Edin. 1505, R.C.S.I. 1784, R.C.S. Eng. 1800. Therefore F.R.C.S. means Fellow of *a*—not *the*—College of Surgeons; and when a man desires it to be known that he is a Fellow of *the* College he must add Edin., I., or Eng. The moral aspect of the question may be looked at in another light, for it assumes a wider aspect. I take it for granted that "M.D." has the London University diploma, and that what he would apply to men who hold the F.R.C.S. Edin. or F.R.C.S.I. might with equal truth be applicable to men who hold University degrees. In a question of professional morality we must look for guidance to men whom we revere and we know are above reproach. I take down two books, and on opening them I find the respective authors are T. H. Huxley, LL.D. &c., and Charles Darwin, M.A. &c. The one is LL.D. Edin., the other M.A. Cantab. Would "M.D." venture to state that either of the writers "is morally wrong to assume a title he is not legally entitled" to, to write himself LL.D. or M.A. is deceiving the public and disparaging the professional status of those who are really LL.D. or M.A.? I think not. There is a poem which "M.D." might read with advantage. As I write one brief quotation comes to mind:—

> "The rank is but the guinea stamp,
> The man's the gowd for a' that."

I am, Sirs, your obedient servant,

Beckenham, Sept. 12th, 1891. R. DENISON PEDLEY, F.R.C.S. Edin.

To the Editors of THE LANCET.

SIRS,—In reference to the question of "F.R.C.S.," raised in your issue of to-day by "M.D.," who says he has nothing to do, and who apparently devotes his learned leisure to the study of the Medical Directory, I desire to say a few words.

It is assumed by "M.D." that the Irish examinations are inferior to the English Well, let us see. The University of Dublin is the *only* collegiate body acknowledged by Oxford and Cambridge. A graduate of Trinity College, Dublin, can take a degree at Oxford or Cambridge *without examination*. How, then, can the Dublin degrees be inferior to those of the English sister Universities? The Irish College of Physicians, which claims Graves, Stokes, Marsh, and Corrigan as *alumni*, far surpasses the London College in usefulness at all events, the latter being until quite a recent period only a College of Physicians in name, the onus of supplying practitioners in medicine in England devolving on the Society of Apothecaries. As to the respective examinations of the English and Irish Colleges of Surgeons, each College admits a member or licentiate, as the case may be, to a *modified* examination, which is the best evidence in favour of mutually recognised equality, and the Irish Fellowship entitles army surgeons to promotion, exactly as the English Fellowship does. I have been tempted to reply to "M.D." in consequence of the many recent instances in which, through ignorance or prejudice, disparaging references have been made to Irish qualifications, and on this point I shall say a few plain words. My countrymen have faults, but among their shortcomings want of intelligence is not to be found. At this moment there are a number (out of all proportion to the population) of distinguished Irishmen filling some of the highest positions in the empire; and it is, therefore, absurd to imply that the educational tests devised by a very clever race are likely to be inferior to those of another more distinguished for industry than brilliancy. I hope in future Irish practitioners will be careful to add the indication of their nationality to their qualifications, in order so obviate a possible misinterpretation of the omission, and I will conclude by giving "M.D." information not to be found in the Medical Directory—viz., that as far back as the sixth century, when England was scarcely civilised, Ireland was known on the Continent as the "island of learned men." I am, Sirs, your obedient servant,

Sept. 12th, 1891. L.R.C.P. IRELAND.

To the Editors of THE LANCET.

SIRS,—I, too, like your correspondent "M.D.," whose letter appears in your issue of to-day, occasionally read articles in the medical periodicals. I generally notice the name of the author, just to see whether he is a man of whom I have any personal knowledge; but I estimate the value of his paper by the nature of its contents, not by his professional titles. It is difficult to see why it should be more necessary, in the interests of professional morality, to define accurately the origin of a surgical Fellowship than of a Doctorate of Medicine. The difference in value, as a test of a man's professional attainments at an early period of his career, of the various M.D. degrees, is much greater than the difference in value between the three British surgical Fellowships. Comparing the Edinburgh Fellowship with that of the English College, it will be at once admitted that the standard of knowledge in anatomy and physiology demanded by the former is much less than that required for the latter, but the examination in surgery at Edinburgh is a searching test of a man's knowledge. In addition to that, it must be remembered that before a man can present himself for examination there he must have received the nomination of two Fellows of the College, and one of them must be from real personal knowledge of the candidate. This in itself is a matter of considerable importance, for unless a man acts honourably, and has shown practical evidence of ability and work, he will not be able to find Fellows willing to nominate him. For myself, I always sign myself F.R.C.S.E., leaving it to those who are Fellows of the English College to use F.R.C.S.; but, at the same time, I cannot see that I should be more blameworthy if I omitted the "E" than is your correspondent "M.D." when he omits to inform your readers as to whether his degree was granted by London University or some other British corporation, or by a newly fledged medical college in one of the Western States of the American Union.

I am, Sirs, yours obediently,

Sept. 12th, 1891. F.R.C.S.E., M.R.C.S.Eng.

To the Editors of THE LANCET.

SIRS,—Not having much spare time, I am not able to read many medical periodicals, but I always make it a rule to read THE LANCET, and frequently am much amused, as well as instructed, by the letters that appear from time to time in that classical journal. I do not know who is the author of the letter with the above heading which appears in your issue of to-day's date; but it is a pity he should withhold his name, as he certainly deserves that the *carping critics* should erect a monument to the memory of one of their number, who now will be lost in the obscurity from which he ought never to have emerged. It would be as well if those who strive to pluck out motes from their neighbours eyes would first pluck out the beam that is in their own eye. "M.D." does not tell us whether he is M.D. Oxon or M.D. bogus, M.D. Lond. or M.D Pa.; but I feel sure that your readers will agree with me that unless "M.D." directs his attention to a more interesting subject than the disparagement of certain surgical qualifications, he is likely to remain, as far as the practice of his profession is concerned, "a man with a considerable amount of spare time."

I am, Sirs, yours truly,

Sept. 12th, 1891. NOT AN F.R.C.S.

AN APPEAL.

To the Editors of THE LANCET.

SIRS,—May I through your kindness enlist the help and sympathy of your readers in a case of peculiar hardship, requiring immediate assistance. A medical man of integrity and respectability, of twenty-seven years' standing, through no fault of his own has become insane, and been obliged to be removed to an asylum. His young wife, aged thirty, a highly educated and accomplished lady, with three small children are thrown upon the world in a nearly destitute condition, without friends who are able to help, or prospects, unless a few can be secured through the influence of THE LANCET who will contribute a little to enable her to set up a nursing home, or even lodging-house, by which she may maintain an existence. The case is a genuine one, in urgent need, ample references can be given, and any help will be most gratefully received, and may be addressed to

Yours faithfully,

R. L. BAYLEY, L.R.C.P.I., M.R.C.S.

86, High-street, Stourbridge, Sept. 1891.

*** Several references accompany the above letter.—ED. L.

CLOSURE OF A SALIVARY FISTULA.

To the Editors of THE LANCET.

SIRS,—I have a patient who sustained an injury on the right cheek some twenty-eight years ago which has resulted in the formation of a salivary fistula. A channel has been made which for some time succeeded in conveying the saliva freely into the mouth through a small silver tube. A little saliva still continues to flow through the old fistulous opening. Several attempts have been made to close it, but without success. I shall be very happy to receive any suggestions.

I remain, Sirs, yours truly,

St. Leonards-on-Sea. THOS. P. HARVEY, M.D.

HYDROSTATIC STETHOSCOPES.

To the Editors of THE LANCET.

SIRS,—At p. 234 of THE LANCET in August it is written, "It has been reserved for Dr. T. T. Reynolds to avail himself of the conducting power of water for stethoscopic purposes." A reference to Section 639: 1 of the "Medical Digest" will show that in 1859 Dr. Scott Alison described very fully a hydrostatic stethoscope in the pages of the *Medical Times and Gazette*, vol. ii., pp. 9, 28.

I am, Sirs, yours obediently,

Boundary-road, N.W. RICHD. NEALE, M.D. Lond.

IGNIPUNCTURE OF OS UTERI THROUGH CELLULOID SPECULUM.

To the Editors of THE LANCET.

SIRS,—On page 611 of your journal this method of proceeding is recommended. I write to remind some practitioners that celluloid is so inflammable as to be almost explosive in bulk; and if an over-heated cautery iron were to touch some specimens of it, they would burst into flame immediately, with probably very serious results.

I am, Sirs, yours faithfully,

Folkestone, Sept. 15th, 1891. THOMAS EASTES.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Austin, Norwood; Dr. G. A. Atkinson, Newcastle-on-Tyne; Messrs. Brady and Martin, Newcastle-on-Tyne; Mr. Brooks, Hull; Messrs. Blondeau et Cie., London; Mr. Brocklehurst, Eastbourne; Messrs. Barker and Co., London; Mr. Blackwood, London; Mr. Blount, Paris; Mr. J. B. Browne, London; Dr. Berry, Keightley; Mr. Bowring, Weymouth; Dr. Collie, Homerton; Dr. Carpenter, Croydon; Messrs. Cassell and Co., London; Mr. Chavasse, Birmingham; Messrs. Crossley, Moir, and Co., London; Mr. F. W. Clark, Newcastle-on-Tyne; Mr. Croucher, St. Leonards; Mr. Chapman, Clapham; Mr. Cornish, Manchester Mr. Considine, Ennis; Mr. Drewry, Buxton; Mr. Davis, Ivybridge; Dr. W. Dale, Shanklin; Mr. A. Dukes, Dublin; Messrs. Eason and Son, Dublin; Mr. Edwards, Chester; Messrs. Edwards, Orr, and Co., London; Mr. T. Eastes, Folkestone; Messrs. Elliott, Son, and Boyton, London; Mr. E. V. Eames, Nottingham; Messrs. Fannin and Co., Dublin; Mr. Fullerton, Greenwich; Mr. Flather, Cambridge; Mr. Fournet, London; Mr. Frost, London; Mr. Grinling, Burton-on-Trent; Dr. H. C. Gillies, Brockley; Mr. Hildred, Ipswich; Dr. T. P. Harvey, St. Leonards; Mr. Hand, Macclesfield; Dr. Hume, Newcastle-on-Tyne; Mr. Hornibrook, London; Mr. Hankinson, Bournemouth; Mr. Hodgson, London; Mr. Heatherley, New Ferry; Mr. W. M. Jones, Rotherham; Mr. Kestin, London; Messrs. Keith and Co., Edinburgh; Mr. W. A. Lane, London; Messrs. Longmans, Green, and Co., London; Mr. Lloyd, Tregaron; Mr. Leckie, London; Mr. Hugh Lane, Bath; Mr. F. W. Lowndes, Liverpool; Mr. Larkin, Liverpool; Mr. Marshall, Islington; Mr. McPhail, London; Messrs. Maclehose and Sons, Glasgow; Mr. Monninger, London; Messrs. Mitchell and Co., London; Mr. F. H. Moore, Littleport; Messrs. Merryweather and Sons, London; Mr. McLaurin, London; Messrs. Maw, Son, and Thompson, London; Mr. Mansell-Moullin; Mr. Meier, Redhill; Mr. John C. Nimmo, London; Dr. Neale, Hampstead; Dr. T. Oliver, Newcastle-on-Tyne; Mr. Pedley, Beckenham; Messrs. Planner and Co., London; Mr. Y. J. Pentland, Edinburgh; Messrs. Richardson and Co., Leicester; Mr. Richardson, New Swindon; Messrs. Root and Co., London; Dr. E. Rice, Oxford; Dr. Ross, Belfast; Messrs. Smith and Son, London; Dr. F. J. Smith, London; Messrs. W. H. Smith and Son, Birmingham; Dr. Sergeant, Camberwell; Messrs. Squire and Co., London; Mr. Saunders, Eastbourne; Messrs. Street and Co., London; Dr. Smith, Bath; Mr. Sampson, York; Dr. Sandwith, London; Mr. Sell, London; Dr. Stedman, Sevenoaks; Dr. Savill, London; Mr. Stoney, Millom; Dr. J. E. Sinclair, London; Mr. W. Tallack, London; Dr. D. Turner, Arley; Mr. Turner, Bewdley; Dr. A. Wilson, Edinburgh; Dr. White, Bournemouth; Messrs. Wright and Co., Bristol; Mr. Worsley, London; Mr. Wiggins, London; Dr. Weyl, Berlin; Dr. White; Mr. Wood, Middleton; Dr. Walker, Fife; Not an F.R.C.S.; Senex; Iota, London; Secretary, Ingham Infirmary, South Shields; H. W., London; M. A. B., London; Secretary, Hospital for Women, London; Sarcoma, London; Raeson; L. T.; Mullens, Upper Deal; O. P. Q., London; Assistant, London; Secretary, St. John's Hospital, London; Medicus, London; Filter; Secretary, Stockport Infirmary; F.R.C.S.E., M.R.C.S.Eng.; L.R.C.P.I.; Secretary, Bolton Infirmary; H., Ashton-under-Lyne; Partnership, London; Parish Doctor; Fiat Lux; Lex, London; St. Mungo's College, Glasgow.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Fraser, Aden; Mr. Brooker, Bootle; Mr. Whiteside, Penrith; Messrs. Cole and Son, Lincoln; Mr. Cochrane, Wigtownshire; Mr. Clark, Melton Mowbray; Mr. Brodie, Newcastle-on-Tyne; Mr. Pendlebury, Colwyn Bay; Mr. Bush, Chippenham; Mr. Wallis, Poole; Mr. Robson, Colwyn Bay; Dr. Ascher, Torquay; Mr. Evans, Salop; Mr. Richardson, New Swindon; Mrs. Draper, Lee; Mr. Drewry; Mr. Cornish, Shepherd's Bush; Dr. Vinrace, Fulham; Mr. Jones, Llangollen; Mr. Michell, Swinbridge; Mr. Parry, Wellingborough; Dr. Bulstrode, Stanmore; Mr. Chapman, Portland; Mr. Wallace, Ripley; Mr. Weber, Switzerland; Mr. Macdonald, Glasgow; Mr. Wallace, Ripley; Mr. Denton, Sheffield; Mr. Purland, Woolwich; Mr. Hilliard, Ealing; Mr. Ling, Keightley; Mr. Knott, Castlebar; Mr. Cuthbert, Salop; Mr. Currie, Blackheath; Mr. Whitwell, Shrewsbury; Mr. Wykes, Shipston-on-Stour; Mr. Hardy, Maidstone; Mr. Evans, Grantham; Dr. Farmer, Lewisham; Mr. McCarthy, Kempsey; Dr. Williams, Machynlleth; Mr. Boreham, Torquay; Mr. Nair, Cambridge; Mr. Tyte, Minchinhampton; Mr. Bevan, Monmouth; Mr. Everard, Dalston; Mr. Lowe, Brynmawr; Mr. Bodker, Folkestone; Mr. Bassett, Birmingham; Mr. Browning, Sheffield; Mr. McLennan, Ross-shire; Mr. O'Connor, Oswestry; Dr. McMordie, co. Down; Mr. Williams, jun., Sherborne; Mr. Turner, Edinburgh; Mr. Shannon, Consett; Mr. Green, Accrington; Mr. Bennett, Dulwich; Mr. Willis, Leatherhead; Mr. Lamport, Lancaster; Dr. Saul, Lancaster; Mr. Hedden, Bideford; Mr. Atkins, Devonport; Dr. Sparrow, Burton-on-Trent; Messrs. Gardiner and Co., Goole; Mr. Heywood, Manchester; Mr. Hay, Hull; Dr. Gordon, Salisbury; Dr. Richards, Ledbury; Mr. Fiske, Lynton; Mr. Schaub, London; Mr. Parry, Wellingboro'; Mr. Bell, Lancaster; Mr. Thin, Edinburgh; Mr. Warner, Sheffield; Mr. Doyle, Leigh; Mr. Hodgson, Carlisle; Mr. Wayte; Mr. Nicholls, Polyphant; Dr. Taylor, Johnstone; Nurse Nicholson, Notting-hill; Royal Hospital for Diseases of the Chest, City-road; W., London; L. P., London; A. B., Staffs; Old Marlburian, London; Z., London; E., London; Secretary, Yorkshire College, Leeds; Vale, London; West-end Hospital for Diseases of the Nervous System; Permanency, London; Secretary, Glasgow Western Infirmary; L. E. M. London; W. P., London; Secretary, East Suffolk Hospital; A. B., Colchester; Alma, London; Omega, London; House Surgeon, London; M.D., Edinburgh; W. F., London; Secretary, West Herts Infirmary, Hemel Hempstead; Leighton, London; A. H. S., High Wycombe; Initia, London; Principal, Woodbridge; A. H. S., Bayswater; Femur, London; Practice, London; Secretary, Hereford; Dr., Peckham; Alpha, Sheffield; F. M., London; P. Q., London; M. S., Birkenhead; Contemporary, London; Dowker, London; Chirurgien, Sunderland; H., London; G. S., London; F. N. B., Derby; W. A. K., Hackney; Alpha, London; M. N., Bedford; W. B., London; Vindex, London; Fallopius, London; Surgeon, Southsea; Suffolk, London.

NEWSPAPERS.—*Newcastle Morning News, Gloucester Journal, Insurance Record, Windsor and Eton Express, Glasgow Herald, Guy's Hospital Gazette, Dundee Advertiser, Sheffield Daily Telegraph, North British Daily Mail, Western Morning News, Eastbourne Gazette, Newcastle Leader, City Press, Windsor and Eton Gazette, Sussex Daily News, Yorkshire Post, Le Temps (Paris), Alliance News, Bristol Mercury, Liverpool Daily Post, Scottish Leader, Manchester Guardian, Leeds Mercury, Builder, Jewish Chronicle, The Newspaper, Local Government Chronicle, The Age (Melbourne), Surrey Advertiser, Liverpool Courier, West Middlesex Standard, Metropolitan, Reading Mercury, Weekly Free Press and Aberdeen Herald, Law Journal, Saturday Review, Spectator, Pharmaceutical Journal, Mining Journal, Nottingham Express, Chemist and Druggist, Ormskirk Advertiser, West Middlesex Advertiser, Citizen, Architect, Broad Arrow, South Eastern Gazette, Oswestry Advertiser, Cape Argus, Shields Daily Gazette, Hertfordshire Mercury, Sunday Times, The Herald (London), Echo (London), South Wales Echo, &c.*, have been received.

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